

Copy

27

NASA TM X-690

NASA TM X-690

(NASA-TM-X-69C) PRESSURE DISTRIBUTIONS ON
THE CYLINDRICAL PORTION OF A MISSILE WITH
CRUCIFORM WINGS AT TRANSONIC SPEEDS F.J.
Capone (NASA) May 1962 65 p

N72-73541

MUR 17

CC/99

Unclassified
32645

TECHNICAL MEMORANDUM

X-690

PRESSURE DISTRIBUTIONS ON THE CYLINDRICAL PORTION OF A
MISSILE WITH CRUCIFORM WINGS AT TRANSONIC SPEEDS

By Francis J. Capone

Langley Research Center
Langley Station, Hampton, Va.



CLASSIFICATION CHANGED

UNCLASSIFIED

TO

By Authority of

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON

May 1962

65 17

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

TECHNICAL MEMORANDUM X-690

PRESSURE DISTRIBUTIONS ON THE CYLINDRICAL PORTION OF A
MISSILE WITH CRUCIFORM WINGS AT TRANSONIC SPEEDS*

By Francis J. Capone

SUMMARY

Pressure distributions have been measured at transonic speeds on the cylindrical portion of a missile with cruciform wings and with and without auxiliary-power exhaust bleed air. The tests were conducted in the Langley 16-foot transonic tunnel at Mach numbers from 0.70 to 1.03, at angles of attack from about -2.1° to 15.3° , and at roll angles of 0° , 45° , and 90° . The test Reynolds number per foot varied from 3.35×10^6 to 4.05×10^6 . The results of this investigation are presented as tables and figures of static-pressure error coefficient.

INTRODUCTION

A wind-tunnel investigation has been conducted at transonic speeds to determine the pressure distributions on the cylindrical portion near the midsection of a missile with cruciform wings and with two external longitudinal channels, which housed electrical cables. The body pressures are to be used as a measure of pressure altitude for purposes of missile arming by barometric fusing. The purpose of the investigation was to provide data showing which combination of orifices, when numerically averaged, would give the least error in measuring free-stream static pressure for various combinations of roll attitude and angle of attack.

Body pressures were measured at eight longitudinal stations, each with 14 orifices around the periphery in a plane perpendicular to the missile axis. Auxiliary-power-unit exhaust gases were simulated with a cold-air jet exhausting through a port forward of the orifices.

/

Tests were conducted with and without exhaust-gas simulation at Mach numbers from 0.70 to 1.03, at angles of attack from -2.1° to 15.3° , and at roll angles of 0° , 45° , and 90° . The test Reynolds number per foot varied from 3.35×10^6 to 4.05×10^6 . Results of tests conducted at supersonic speeds on the same missile with a different exhaust-port location are reported in references 1 and 2.

SYMBOLS

M	free-stream Mach number
p	measured surface static pressure, lb/sq ft
p_∞	free-stream static pressure, lb/sq ft
$\frac{p - p_\infty}{p_\infty}$	static-pressure error coefficient
w	weight flow of auxiliary-power-unit gases, lb/sec
α	angle of attack, referenced to body center line, deg
θ	orifice meridian row, 0° at top of missile, measured with wing 45° from top and exhaust port on bottom of missile, deg
ϕ	angle of roll, measured from top of missile with wing 45° from top and exhaust port on bottom of missile, deg

MODEL

A sketch and a photograph of the model are shown in figures 1 and 2, respectively. The model, a cruciform-winged missile, had a steel inner body covered with wood. The model, with an ogival nose, was 190.76 inches long and had a maximum body diameter of 14.00 inches. Each of the wings had a root chord of 86.40 inches, a tip chord of 12.70 inches, and a leading-edge sweep of 77.24° . There was no sweep to the trailing edge. Four thin metal struts were added to the wings to insure structural integrity of the model. (See fig. 2.) Two external body channels housing electrical cables were attached to the cylindrical portion of the model starting at a point 50.66 inches back from the nose and ending at the rear of the model. These channels were 2.13 inches wide and 0.86 inch thick. (See fig. 1.)

Surface pressures were measured at eight longitudinal station locations, each with 14 orifices around the periphery in a plane perpendicular to the model axis. The orifices of station 1 were located 73.03 inches back from the nose of the model. Distance between orifice stations was 2.63 inches. Each orifice, 0.04 inch in diameter, was countersunk 0.02 inch at an included angle of 82° , with a resulting 0.08-inch-diameter orifice at the surface of the model. A sketch showing orifice details is given in figure 1.

A sketch and photographs of the exhaust port are shown in figures 3 and 4, respectively. The exhaust port for the cold-air jet, which simulated the exhaust products of an auxiliary power unit, was located 70.22 inches back from the nose of the missile and 2.81 inches forward of the first orifice station (fig. 1); peripherally, the center line of the exhaust port was located at $\theta = 102^\circ$.

APPARATUS AND PROCEDURES

Wind Tunnel and Instrumentation

The present investigation was conducted in the Langley 16-foot transonic tunnel, which is a single-return atmospheric wind tunnel with a slotted octagonal test section. The speed range of this tunnel is from a Mach number of 0.20 to 1.10, with Mach number being varied over this range by a variation of tunnel drive power. The model support system pivoted in such a manner that the section of the model in which the orifices were located was kept on or near the tunnel center line throughout the angle-of-attack range.

Pressures were individually measured on 100-tube mercury-manometer boards. The boards were photographed and the film was read on a film-reading machine. The weight flow of the bleed air was determined from a calibrated venturi flowmeter. The angle of attack of the model was determined by means of an internally located pendulum-type strain-gage inclinometer.

Tests, Corrections, and Accuracies

The model was tested at Mach numbers from 0.70 to 1.03, at angles of attack from -2.1° to 15.3° , and at roll angles of 0° , 45° , and 90° . A cold-air jet at a weight flow of approximately 0.018 pound per second was used to simulate auxiliary-power exhaust gases.

Some of the data for particular orifices were found to be in error and have been omitted from both the tables and figures; therefore, the

data presented in the figures have not been faired between these data points. No other corrections were made to the data. The accuracies of the static-pressure error coefficient and test conditions have been estimated to be:

$\frac{p - p_\infty}{p_\infty}$	.....	±0.005
M	.....	±0.01
α , deg	.....	±0.2
w, lb/sec	.....	±0.005

PRESENTATION OF RESULTS

Tables I to VI present the static-pressure error coefficients at $\phi = 0^\circ$, 45° , and 90° for the tests conducted with and without exhaust-gas simulation at Mach numbers from 0.70 to 1.03. The variation of static-pressure error coefficient with longitudinal orifice station for $M = 0.70$ and $M = 1.00$ at the various roll angles of this investigation is presented in figures 5 to 10. An outline of the content of the data tables and figures is as follows:

Table

Static-pressure error coefficient at:

$\phi = 0^\circ$; without bleed air	.....	I
$\phi = 0^\circ$; with bleed air	.....	II
$\phi = 45^\circ$; without bleed air	.....	III
$\phi = 45^\circ$; with bleed air	.....	IV
$\phi = 90^\circ$; without bleed air	.....	V
$\phi = 90^\circ$; with bleed air	.....	VI

Figure

Variation of static-pressure error coefficient
with longitudinal orifice station for:

$M = 0.70; \phi = 0^\circ$	.....	5
$M = 1.00; \phi = 0^\circ$	.....	6
$M = 0.70; \phi = 45^\circ$	.....	7
$M = 1.00; \phi = 45^\circ$	.....	8
$M = 0.70; \phi = 90^\circ$	.....	9
$M = 1.00; \phi = 90^\circ$	.....	10

CONCLUDING REMARK

Results have been presented of experimental pressure distributions obtained at transonic speeds over the cylindrical portion of a cruciform-wing missile configuration both with and without auxiliary exhaust bleed air. No analysis of the results is attempted.

Langley Research Center,
National Aeronautics and Space Administration,
Langley Station, Hampton, Va., March 19, 1962.

REFERENCES

1. Compitello, Frank E.: Hawk Missile Body-Port Pressure Distribution Survey at Various Angles of Attack and Roll for Mach Numbers of 1.36, 1.58, 1.88, 2.00, & 2.17. Tech. Memo. No. 21, Feltman Res. and Eng. Labs., Picatinny Arsenal (Dover, N. J.), Feb. 1959.
2. Compitello, Frank E.: Hawk Missile Manifolded Body-Port Pressure Distributions at Various Angles of Attack and Roll for Mach Numbers of 1.25, 1.36, 1.58, 1.88, 2.00, and 2.17. Tech. Memo. No. 37, Feltman Res. and Eng. Labs., Picatinny Arsenal (Dover, N. J.), Feb. 1960.

TABLE II.-Continued

(d) $\theta = 0^\circ$; $M = 0.95$

TABLE II.-Continued.

(e) $\theta = 90^\circ$; $M \approx 1.00$

θ, deg	(p - p _{atm}) / p _{atm} for longitudinal station								(p - p _{atm}) / p _{atm} for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha = -2.0^\circ; w = 0.018$																
0.0	0.0508	0.0481	0.0416	0.0481	0.0416	0.0353	0.0544	0.0736	0.0618	0.0488	0.0488	0.0488	0.0425	0.0554	0.0618	0.0618
22.5	0.0544	0.0481	0.0416	0.0481	0.0416	0.0353	0.0544	0.0736	0.0594	0.0488	0.0488	0.0488	0.0425	0.0554	0.0618	0.0618
45.0	0.0544	0.0544	0.0481	0.0481	0.0416	0.0353	0.0544	0.0736	0.0594	0.0554	0.0488	0.0488	0.0425	0.0554	0.0618	0.0618
67.5	0.0481	0.0481	0.0481	0.0416	0.0353	0.0416	0.0416	0.0673	0.0618	0.0618	0.0581	0.0488	0.0425	0.0554	0.0425	0.0747
112.5	0.0393	0.0353	0.0416	0.0416	0.0416	0.0353	0.0481	0.0736	0.0295	0.0488	0.0488	0.0425	0.0488	0.0361	0.0488	0.0811
135.0	0.0311	0.0316	0.0481	0.0481	0.0353	0.0481	0.0289	0.0865	0.0168	0.0554	0.0518	0.0425	0.0554	0.0361	0.0681	0.1068
157.5	0.0214	0.0216	0.0481	0.0481	0.0353	0.0481	0.0146	0.0865	0.0168	0.0554	0.0518	0.0425	0.0554	0.0361	0.0681	0.1068
180.0	0.0093	0.0344	0.0544	0.0481	0.0481	0.0353	0.0353	0.0544	-0.0154	0.0811	0.0747	0.0425	0.0554	0.0361	0.0681	0.1068
202.5	0.0098	0.0416	0.0481	0.0416	0.0416	0.0289	0.0481	0.0573	-0.0154	0.0618	0.0554	0.0488	0.0361	0.0554	0.0873	0.0873
225.0	0.0224	0.0416	0.0416	0.0353	0.0353	0.0353	0.0416	0.0573	0.0102	0.0594	0.0554	0.0488	0.0425	0.0425	0.0488	0.1068
247.5	0.0417	0.0546	0.0546	0.0483	0.0354	0.0483	0.0417	0.0610	0.0358	0.0552	0.0486	0.0422	0.0486	0.0486	0.0686	0.0686
270.0	0.0546	0.0546	0.0546	0.0483	0.0483	0.0483	0.0417	0.0673	0.0592	0.0552	0.0552	0.0425	0.0486	0.0486	0.0486	0.0744
292.5	0.0483	0.0546	0.0483	0.0417	0.0483	0.0354	0.0246	0.1122	0.0592	0.0486	0.0486	0.0425	0.0486	0.0486	0.0618	0.0744
315.0	0.0610	0.0483	0.0483	0.0483	0.0483	0.0354	0.0354	0.0546	0.0616	0.0552	0.0486	0.0592	0.0422	0.0616	0.0229	0.0229
$\alpha = 0^\circ; w = 0.018$																
0.0	0.0618	0.0554	0.0425	0.0488	0.0425	0.0425	0.0554	0.0747	0.0750	0.0622	0.0622	0.0686	0.0622	0.0556	0.0750	0.0816
22.5	0.0594	0.0554	0.0554	0.0425	0.0425	0.0425	0.0554	0.0811	0.0492	0.0492	0.0556	0.0427	0.0492	0.0492	0.0556	0.0868
45.0	0.0594	0.0554	0.0488	0.0488	0.0425	0.0554	0.0488	0.1068	0.0556	0.0556	0.0556	0.0492	0.0556	0.0492	0.0556	0.1074
67.5	0.0618	0.0554	0.0488	0.0488	0.0425	0.0554	0.0488	0.1068	0.0556	0.0556	0.0556	0.0492	0.0556	0.0492	0.0556	0.1074
112.5	0.0361	0.0425	0.0488	0.0425	0.0488	0.0425	0.0554	0.0811	0.0361	0.0492	0.0492	0.0427	0.0427	0.0361	0.0492	0.0816
135.0	0.0322	0.0554	0.0554	0.0425	0.0554	0.0425	0.0681	0.1064	0.0103	0.0686	0.0686	0.0492	0.0622	0.0427	0.0816	0.1139
157.5	0.0168	0.0681	0.0681	0.0618	0.0488	0.0425	0.0618	0.0747	-0.0286	0.0944	0.0944	0.0816	0.0848	0.0556	0.0750	0.0944
180.0	0.0039	0.0681	0.0618	0.0554	0.0488	0.0425	0.0618	0.0618	-0.0221	0.1010	0.1010	0.0944	0.0816	0.0552	0.0944	0.1010
202.5	0.0232	0.0488	0.0488	0.0488	0.0425	0.0425	0.0554	0.0940	-0.0217	0.0622	0.0556	0.0816	0.0427	0.0750	0.1139	0.1139
225.0	0.0232	0.0488	0.0488	0.0488	0.0425	0.0425	0.0554	0.0940	0.0361	0.0553	0.0489	0.0489	0.0425	0.0489	0.0425	0.1139
247.5	0.0486	0.0616	0.0552	0.0552	0.0486	0.0486	0.0486	0.0744	0.0361	0.0294	0.0294	0.0101	0.0101	0.0037	0.0037	0.0294
270.0	0.0616	0.0552	0.0552	0.0486	0.0486	0.0486	0.0552	0.0808	0.0489	0.0553	0.0489	0.0553	0.0489	0.0620	0.1136	0.1136
292.5	0.0552	0.0552	0.0552	0.0486	0.0486	0.0486	0.0486	0.1131	0.0553	0.0489	0.0489	0.0425	0.0489	0.0425	0.0489	0.1136
315.0	0.0680	0.0552	0.0486	0.0486	0.0552	0.0422	0.0616	0.0553	0.0553	0.0489	0.0489	0.0553	0.0489	0.0620	0.1136	0.1136
$\alpha = 2.0^\circ; w = 0.018$																
0.0	0.0618	0.0554	0.0488	0.0488	0.0425	0.0425	0.0554	0.0681	0.0744	0.0616	0.0552	0.0616	0.0486	0.0622	0.0616	0.0744
22.5	0.0594	0.0554	0.0488	0.0488	0.0425	0.0425	0.0554	0.0747	0.0615	0.0615	0.0299	0.0299	0.0299	0.0294	0.0358	0.0616
45.0	0.0594	0.0554	0.0488	0.0488	0.0425	0.0554	0.0488	0.1004	0.0552	0.0552	0.0422	0.0422	0.0294	0.0422	0.0165	0.0616
67.5	0.0618	0.0618	0.0681	0.0554	0.0488	0.0618	0.0488	0.0811	-0.0478	-0.0157	-0.0027	-0.0027	-0.0027	0.0037	0.0037	0.0165
112.5	0.0393	0.0425	0.0425	0.0425	0.0425	0.0425	0.0554	0.0811	0.0027	0.0398	0.0294	0.0229	0.0229	0.0358	0.0616	0.0616
135.0	0.0322	0.0554	0.0554	0.0425	0.0554	0.0425	0.0554	0.0811	0.0027	0.0398	0.0294	0.0229	0.0229	0.0358	0.0616	0.0616
157.5	0.0039	0.0747	0.0681	0.0681	0.0554	0.0425	0.0618	0.0747	-0.0414	0.0873	0.0957	0.0873	0.0808	0.0744	0.0937	0.1131
180.0	-0.0091	0.0747	0.0618	0.0618	0.0554	0.0361	0.0681	0.0681	-0.0351	0.1065	0.1195	0.1131	0.1065	0.0973	0.1195	0.1195
202.5	-0.0023	0.0554	0.0618	0.0488	0.0486	0.0361	0.0554	0.0811	-0.0542	0.0873	0.1001	0.0937	0.0873	0.0860	0.0937	0.1259
225.0	0.0048	0.0554	0.0554	0.0488	0.0488	0.0425	0.0488	0.1004	0.0285	0.0552	0.0552	0.0486	0.0422	0.0552	0.1195	0.1195
247.5	0.0486	0.0552	0.0552	0.0486	0.0486	0.0486	0.0552	0.0808	0.0099	0.0686	0.0686	0.0581	0.0422	0.0581	0.1141	0.1141
270.0	0.0616	0.0552	0.0552	0.0486	0.0486	0.0486	0.0552	0.0808	-0.0738	-0.0738	-0.0802	-0.0802	-0.0802	-0.0738	-0.0674	-0.0352
292.5	0.0552	0.0552	0.0552	0.0486	0.0486	0.0552	0.0486	0.1065	0.0484	0.0484	0.0420	0.0484	0.0356	0.0227	0.0484	0.0999
315.0	0.0680	0.0552	0.0486	0.0552	0.0486	0.0486	0.0552	0.0616	0.0163	0.0099	0.0227	0.0356	0.0227	0.0484	0.0999	0.0999

TABLE II.- Concluded.

$$(f) \quad g = 0^\circ; \quad M = 1.03.$$

TABLE III.- Continued.

(b) $\beta = 45^\circ$; $M = 0.80$.

θ , deg	$(\rho - \rho_\infty)/\rho_\infty$ for longitudinal station								$(\rho - \rho_\infty)/\rho_\infty$ for longitudinal station								
	a=-2.0°				a=7.9°				a=12.0°				a=15.0°				
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
0.0	-0.0065	-0.0117	-0.0117	-0.0014	-0.0065	-0.0065	-0.0037	0.0037	-0.0068	-0.0119	-0.0119	-0.0068	-0.0068	-0.0017	-0.0017	-0.0017	
22.5	-0.0117	-0.0117	0.0140	-0.0065	-0.0065	-0.0014	-0.0014	0.0140	-0.0223	-0.0172	0.0036	-0.0172	-0.0223	-0.0119	-0.0119	-0.0119	
45.0	-0.0117	-0.0065	-0.0065	-0.0065	-0.0117	-0.0014	-0.0293	0.0293	-0.0223	-0.0223	-0.0223	-0.0223	-0.0172	-0.0191	-0.0191	-0.0191	
67.5	-0.0117	-0.0117	-0.0065	-0.0065	-0.0065	-0.0014	-0.009	0.009	-0.017	-0.0017	-0.0087	-0.0087	-0.0172	-0.0172	-0.0172	-0.0172	
112.5	-0.0147	-0.0117	-0.0065	-0.0065	-0.0065	-0.0045	-0.0014	0.0191	-0.0017	-0.0017	-0.0087	-0.0087	-0.0191	-0.0191	-0.0191	-0.0191	
135.0	-0.0218	-0.0117	-0.0065	-0.0117	-0.0014	-0.0065	-0.0089	0.0243	-0.0068	-0.0087	0.0138	-0.0087	-0.0242	-0.0242	-0.0346	-0.0346	
157.5	-0.0270	-0.0014	-0.0065	-0.0037	-0.0065	-0.0117	-0.0037	0.0089	-0.0327	-0.0056	0.0087	-0.0087	-0.0242	-0.0138	-0.0036	-0.0242	-0.0293
180.0	-0.0270	-0.0117	-0.0065	-0.0065	-0.0017	-0.0014	-0.0014	0.0055	-0.0327	-0.0172	-0.0119	-0.0017	-0.0119	-0.0138	-0.0087	-0.0087	
202.5	-0.0218	-0.0117	-0.0187	-0.0117	-0.0117	-0.0045	-0.0014	0.0191	-0.0379	-0.0223	-0.0275	-0.0223	-0.0223	-0.0223	-0.0268	-0.0268	
225.0	-0.0117	-0.0066	-0.0066	-0.0037	-0.0066	-0.0015	-0.0015	0.0088	-0.0223	-0.0170	-0.0119	-0.0068	-0.0119	-0.0068	-0.0068	-0.0068	
247.5	-0.0066	-0.0117	-0.0066	-0.0066	-0.0015	-0.0015	-0.0015	0.0139	-0.0068	-0.0119	-0.0068	-0.0068	-0.0068	-0.0119	-0.0119	-0.0119	
315.0	-0.0117	-0.0066	-0.0066	-0.0066	-0.0015	-0.0066	-0.0088	0.0344	-0.0017	-0.0017	-0.0017	-0.0034	-0.0017	-0.0067	-0.0067	-0.0067	
337.5	-0.0066	-0.0117	-0.0066	-0.0015	-0.0037	-0.0066	-0.0088	0.0344	-0.0068	-0.0068	-0.0068	-0.0017	-0.0068	-0.0068	-0.0017	-0.0344	
0.0	-0.0117	-0.0117	-0.0117	-0.0066	-0.0066	-0.0066	-0.0015	0.0037	-0.0222	-0.0222	-0.0222	-0.0170	-0.0170	-0.0170	-0.0222	-0.0222	
22.5	-0.0117	-0.0117	0.0098	-0.0066	-0.0066	-0.0066	-0.0015	0.0088	-0.0428	-0.0377	0.0170	-0.0324	-0.0324	-0.0273	-0.0324	-0.0324	
45.0	-0.0117	-0.0066	-0.0066	-0.0066	-0.0117	-0.0066	-0.0014	0.0293	-0.0531	-0.0531	-0.0531	-0.0479	-0.0531	-0.0479	-0.0479	-0.0479	
67.5	-0.0168	-0.0168	-0.0117	-0.0117	-0.0066	-0.0117	-0.0066	0.0190	-0.0464	-0.0464	-0.0464	-0.0467	-0.0464	-0.0467	-0.0467	-0.0467	
112.5	-0.0219	-0.0117	-0.0015	-0.0066	-0.0015	-0.0066	-0.0139	0.0293	-0.0015	-0.0139	0.0241	-0.0139	-0.0139	-0.0241	-0.0241	-0.0241	
135.0	-0.0271	-0.0015	-0.0066	-0.0088	-0.0015	-0.0066	-0.0037	0.0088	-0.0273	-0.0036	0.0086	-0.0241	-0.0241	-0.0293	-0.0293	-0.0293	
180.0	-0.0219	-0.0117	-0.0015	-0.0015	-0.0015	-0.0066	-0.0088	0.0037	-0.0866	-0.0068	-0.0119	-0.0170	-0.0222	-0.0105	-0.0105	-0.0105	
202.5	-0.0219	-0.0117	-0.0117	-0.0117	-0.0046	-0.0066	-0.0015	0.0242	-0.0586	-0.0426	-0.0428	-0.0428	-0.0428	-0.0479	-0.0377	-0.0377	
225.0	-0.0117	-0.0066	-0.0066	-0.0015	-0.0066	-0.0066	-0.0066	0.0088	-0.0322	-0.0271	-0.0271	-0.0219	-0.0219	-0.0531	-0.0479	-0.0479	
247.5	-0.0117	-0.0066	-0.0066	-0.0066	-0.0015	-0.0066	-0.0037	0.0293	-0.0373	-0.0424	-0.0373	-0.0424	-0.0373	-0.0424	-0.0424	-0.0424	
315.0	-0.0117	-0.0066	-0.0066	-0.0066	-0.0015	-0.0066	-0.0037	0.0293	-0.0424	-0.0476	-0.0424	-0.0424	-0.0424	-0.0424	-0.0424	-0.0424	
337.5	-0.0066	-0.0117	-0.0066	-0.0015	-0.0066	-0.0037	-0.0037	-0.0424	-0.0680	-0.0680	-0.0578	-0.0476	-0.0476	-0.0373	-0.0373	-0.0373	
0.0	-0.0068	-0.0068	-0.0068	-0.0015	-0.0015	-0.0036	0.0036	-0.0271	-0.0271	-0.0322	-0.0271	-0.0322	-0.0271	-0.0271	-0.0271	-0.0271	
22.5	-0.0119	-0.0068	0.0139	-0.0068	-0.0068	-0.0068	-0.0015	0.0086	-0.0476	-0.0476	-0.0219	-0.0424	-0.0424	-0.0373	-0.0373	-0.0373	
45.0	-0.0068	-0.0068	-0.0068	-0.0068	-0.0068	-0.0068	-0.0015	0.0293	-0.0732	-0.0732	-0.0732	-0.0732	-0.0732	-0.0660	-0.0219	-0.0219	
67.5	-0.0117	-0.0117	-0.0015	-0.0068	-0.0068	-0.0036	-0.0015	0.0190	-0.0578	-0.0629	-0.0424	-0.0476	-0.0527	-0.0373	-0.0373	-0.0373	
112.5	-0.0222	-0.0066	-0.0015	-0.0068	-0.0068	-0.0068	-0.0015	0.0190	-0.0629	-0.0629	-0.0629	-0.0629	-0.0629	-0.0666	-0.0317	-0.0317	
135.0	-0.0119	-0.0119	-0.0015	-0.0015	-0.0015	-0.0068	-0.0036	0.0190	-0.0117	-0.0242	0.0139	-0.0253	-0.0190	-0.0242	-0.0344	-0.0344	
180.0	-0.0222	-0.0064	-0.0036	-0.0066	-0.0015	-0.0068	-0.0086	0.0190	-0.0732	-0.0164	-0.0219	-0.0219	-0.0219	-0.0666	-0.0317	-0.0317	
202.5	-0.0068	-0.0068	-0.0068	-0.0015	-0.0015	-0.0068	-0.0036	0.0190	-0.0783	-0.0578	-0.0629	-0.0629	-0.0629	-0.0732	-0.0578	-0.0578	
225.0	-0.0170	-0.0119	-0.0119	-0.0015	-0.0015	-0.0015	-0.0015	0.0241	-0.0885	-0.0834	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	
247.5	-0.0117	-0.0066	-0.0066	-0.0015	-0.0066	-0.0015	-0.0015	0.0241	-0.0373	-0.0732	-0.0732	-0.0732	-0.0732	-0.0322	-0.0424	-0.0424	
315.0	-0.0117	-0.0066	-0.0066	-0.0015	-0.0066	-0.0015	-0.0015	0.0293	-0.0680	-0.0732	-0.0629	-0.0629	-0.0629	-0.0732	-0.0424	-0.0424	
337.5	-0.0117	-0.0066	-0.0066	-0.0015	-0.0066	-0.0015	-0.0015	0.0293	-0.0168	-0.0117	-0.0168	-0.0168	-0.0168	-0.0271	-0.0319	-0.0319	
0.0	-0.0066	-0.0117	-0.0017	-0.0066	-0.0066	-0.0066	-0.0014	0.0037	-0.0271	-0.0271	-0.0322	-0.0271	-0.0322	-0.0271	-0.0271	-0.0271	
22.5	-0.0117	-0.0088	-0.0117	-0.0066	-0.0017	-0.0066	-0.0014	0.0037	-0.0476	-0.0476	-0.0476	-0.0476	-0.0476	-0.0346	-0.0346	-0.0346	
45.0	-0.0117	-0.0066	-0.0037	-0.0014	-0.0117	-0.0066	-0.0014	0.0141	-0.0531	-0.0531	-0.0531	-0.0531	-0.0531	-0.0479	-0.0479	-0.0479	
67.5	-0.0117	-0.0117	-0.0014	-0.0066	-0.0037	-0.0014	-0.0014	0.0242	-0.0646	-0.0646	-0.0646	-0.0646	-0.0646	-0.0578	-0.0578	-0.0578	
112.5	-0.0219	-0.0017	-0.0017	-0.0017	-0.0017	-0.0066	-0.0066	0.0241	-0.0732	-0.0732	-0.0732	-0.0732	-0.0732	-0.0660	-0.0219	-0.0219	
135.0	-0.0375	0.0037	-0.0014	-0.0014	-0.0037	-0.0066	-0.0066	0.0191	-0.0885	-0.0883	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	
180.0	-0.0272	-0.0066	-0.0066	-0.0066	-0.0066	-0.0066	-0.0017	0.0141	-0.0885	-0.0883	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	
202.5	-0.0221	-0.0117	-0.0168	-0.0117	-0.0117	-0.0066	-0.0014	0.0191	-0.0885	-0.0883	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	
225.0	-0.0168	-0.0168	-0.0168	-0.0066	-0.0168	-0.0168	-0.0014	0.0191	-0.0885	-0.0883	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	
247.5	-0.0066	-0.0117	-0.0066	-0.0066	-0.0015	-0.0066	-0.0015	0.0240	-0.0885	-0.0883	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	
315.0	-0.0117	-0.0117	-0.0117	-0.0066	-0.0066	-0.0015	-0.0015	0.0240	-0.0885	-0.0883	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	
337.5	-0.0117	-0.0117	-0.0117	-0.0066	-0.0015	-0.0066	-0.0015	0.0240	-0.0885	-0.0883	-0.0883	-0.0883	-0.0883	-0.0783	-0.0660	-0.0660	

TABLE III.- Continued.

(e) $\beta = 45^\circ$; $M = 1.00$.

θ, deg	$(p - p_m)/p_m$ for longitudinal station								$(p - p_m)/p_m$ for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha = 2.0^\circ$																
0.0	0.0677	0.0550	0.0484	0.0550	0.0421	0.0421	0.0614	0.0807	0.0614	0.0550	0.0484	0.0484	0.0420	0.0484	0.0550	0.0678
22.5	0.0614	0.0550	0.0743	0.0484	0.0421	0.0484	0.0550	0.0870	0.0484	0.0484	0.0742	0.0420	0.0420	0.0484	0.0742	0.1257
45.0	0.0614	0.0550	0.0484	0.0484	0.0484	0.0484	0.0550	0.1129	0.0614	0.0550	0.0484	0.0420	0.0420	0.0420	0.0420	0.1257
67.5	0.0550	0.0550	0.0550	0.0484	0.0421	0.0550	0.0743	0.0671	0.0614	0.0614	0.0742	0.0550	0.0420	0.0614	0.0935	0.1257
112.5	0.0550	0.0550	0.0484	0.0484	0.0484	0.0484	0.0550	0.0956	0.0550	0.0550	0.0484	0.0420	0.0420	0.0484	0.0956	0.1257
135.0	0.0228	0.0550	0.0614	0.0421	0.0550	0.0357	0.0677	0.0936	-0.0029	0.0678	0.0742	0.0550	0.0614	0.0420	0.0805	0.1257
157.5	0.0164	0.0743	0.0677	0.0677	0.0550	0.0421	0.0677	0.0743	-0.0159	0.0742	0.0742	0.0742	0.0614	0.0420	0.0742	0.0871
180.0	0.0164	0.0614	0.0550	0.0484	0.0421	0.0677	0.0614	-0.0287	0.0805	0.0614	0.0550	0.0356	0.0678	0.0678	0.0678	0.0678
202.5	0.0498	0.0550	0.0550	0.0484	0.0421	0.0550	0.0807	0.0499	0.0614	0.0614	0.0550	0.0484	0.0292	0.0550	0.0871	0.0871
225.0	0.0321	0.0550	0.0484	0.0421	0.0550	0.0421	0.0800	0.0497	0.0550	0.0484	0.0420	0.0420	0.0420	0.0420	0.0420	0.0420
247.5	0.0483	0.0610	0.0546	0.0484	0.0417	0.0483	0.0417	0.0737	0.0422	0.0552	0.0486	0.0486	0.0422	0.0486	0.0486	0.0616
292.5	0.0610	0.0483	0.0483	0.0417	0.0483	0.0417	0.0483	0.0737	0.0616	0.0552	0.0616	0.0552	0.0552	0.0552	0.0744	0.0744
315.0	0.0483	0.0486	0.0483	0.0417	0.0483	0.0354	0.0546	0.1185	0.0552	0.0552	0.0486	0.0552	0.0486	0.0616	0.0616	0.1001
337.5	0.0610	0.0483	0.0483	0.0483	0.0483	0.0354	0.0610	0.0616	0.0552	0.0486	0.0486	0.0486	0.0422	0.0616	0.0616	0.0616
$\alpha = 3.9^\circ$																
0.0	0.0677	0.0550	0.0484	0.0550	0.0484	0.0421	0.0614	0.0743	0.0486	0.0422	0.0422	0.0422	0.0422	0.0552	0.0552	0.0552
22.5	0.0614	0.0550	0.0743	0.0484	0.0484	0.0484	0.0550	0.0807	0.0358	0.0358	0.0616	0.0294	0.0294	0.0422	0.0422	0.0422
45.0	0.0614	0.0550	0.0484	0.0484	0.0484	0.0484	0.0550	0.1129	0.0358	0.0358	0.0358	0.0294	0.0294	0.0294	0.1065	0.1065
67.5	0.0614	0.0550	0.0614	0.0550	0.0421	0.0614	0.0807	0.0552	0.0486	0.0616	0.0422	0.0294	0.0358	0.0680	0.0680	0.0680
112.5	0.0357	0.0484	0.0550	0.0484	0.0550	0.0421	0.0614	0.0870	0.0101	0.0616	0.0808	0.0680	0.0744	0.0744	0.1195	0.1195
135.0	0.0484	0.0550	0.0484	0.0550	0.0421	0.0614	0.0870	-0.0408	0.0740	0.0740	0.0740	0.0740	0.0740	0.0740	0.1216	0.1216
157.5	0.0098	0.0743	0.0677	0.0677	0.0550	0.0421	0.0677	0.0807	-0.0672	0.0744	0.0937	0.0743	0.0840	0.0846	0.1216	0.1216
180.0	0.0098	0.0614	0.0614	0.0550	0.0421	0.0614	0.0677	0.0877	-0.0930	0.0744	0.0680	0.0616	0.0358	0.0744	0.0880	0.0880
202.5	0.0098	0.0614	0.0550	0.0484	0.0421	0.0614	0.0807	-0.0414	0.0552	0.0552	0.0422	0.0294	0.0229	0.0294	0.0880	0.0880
225.0	0.0291	0.0550	0.0484	0.0484	0.0421	0.0550	0.1000	0.0101	0.0422	0.0294	0.0294	0.0229	0.0229	0.0229	0.0552	0.0552
247.5	0.0417	0.0614	0.0614	0.0550	0.0484	0.0484	0.0695	0.0558	0.0558	0.0486	0.0358	0.0358	0.0422	0.0422	0.0422	
292.5	0.0546	0.0483	0.0483	0.0417	0.0483	0.0417	0.0483	0.0737	0.0616	0.0616	0.0516	0.0546	0.0486	0.0486	0.0616	0.0616
315.0	0.0417	0.0483	0.0417	0.0483	0.0354	0.0546	0.1058	0.0552	0.0486	0.0486	0.0486	0.0486	0.0422	0.0486	0.1259	0.1259
337.5	0.0610	0.0483	0.0483	0.0417	0.0483	0.0354	0.0546	0.0552	0.0486	0.0486	0.0486	0.0486	0.0486	0.0486	0.0486	0.0486
$\alpha = 7.0^\circ$																
0.0	0.0677	0.0550	0.0484	0.0550	0.0421	0.0614	0.0677	0.0807	0.0291	0.0291	0.0291	0.0291	0.0421	0.0421	0.0421	0.0421
22.5	0.0614	0.0550	0.0807	0.0484	0.0484	0.0484	0.0550	0.0743	0.0164	0.0228	0.0421	0.0298	0.0298	0.0228	0.0357	0.0357
45.0	0.0614	0.0550	0.0484	0.0484	0.0484	0.0484	0.0550	0.1129	-0.0095	0.0158	0.0158	-0.0158	-0.0222	-0.0222	-0.0158	0.0743
67.5	0.0614	0.0677	0.0550	0.0421	0.0614	0.0870	0.0870	0.0870	-0.0222	0.0158	0.0158	0.0035	0.0164	0.0357	0.0421	0.0421
112.5	0.0357	0.0550	0.0614	0.0484	0.0550	0.0421	0.0550	0.0936	-0.0222	0.0743	0.1129	0.1063	0.1193	0.1063	0.1193	0.1579
135.0	0.0484	0.0614	0.0743	0.0484	0.0484	0.0484	0.0695	0.0870	-0.0466	0.0807	0.0984	0.1256	0.1386	0.1386	0.1579	0.2028
157.5	-0.0029	0.0743	0.0743	0.0677	0.0550	0.0421	0.0677	0.0867	-0.0999	0.0614	0.1129	0.1050	0.1200	0.1200	0.1422	0.1422
180.0	0.0288	0.0807	0.0677	0.0614	0.0421	0.0677	0.0677	0.0867	-0.1573	0.0164	0.0164	-0.0029	-0.0158	-0.0158	-0.0228	0.0228
202.5	0.0098	0.0614	0.0614	0.0550	0.0484	0.0357	0.0550	0.0807	-0.1573	0.0164	0.0164	-0.0029	-0.0158	-0.0158	-0.0228	0.0228
225.0	0.0291	0.0614	0.0550	0.0484	0.0421	0.0550	0.1000	0.0288	-0.0029	-0.0288	-0.0351	-0.0351	-0.0288	-0.0288	-0.0288	0.0484
247.5	0.0484	0.0550	0.0550	0.0420	0.0550	0.0484	0.0678	0.0498	0.0227	0.0227	0.0290	0.0227	0.0290	0.0290	0.0290	0.0290
292.5	0.0614	0.0614	0.0614	0.0550	0.0420	0.0550	0.0999	0.0621	-0.0221	-0.0221	-0.0221	-0.0221	-0.0221	-0.0221	-0.0221	0.0354
315.0	0.0550	0.0550	0.0484	0.0550	0.0420	0.0614	0.0999	0.0417	0.0610	0.0354	0.0483	0.0227	0.0227	0.0227	0.0227	0.0227
337.5	0.0678	0.0550	0.0550	0.0550	0.0484	0.0614	0.0614	-0.0285	-0.0348	-0.0221	-0.0092	0.0039	-0.0092	0.0039	0.0185	0.0185

TABLE III.- Concluded

$$(f) \quad g = 45^\circ; \quad M = 1.03.$$

TABLE IV. - Continued.

(d) $\beta = 45^\circ$; $M = 0.95$.

θ , deg	$(p - p_m)/p_m$ for longitudinal station								$(p - p_m)/p_m$ for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha = -2.0^\circ$; $w = 0.019$																
0.0	-0.0032	-0.0029	-0.0029	0.0091	0.0032	0.0032	0.0209	0.0388	-0.0029	-0.0088	-0.0029	0.0032	0.0032	0.0032	0.0150	0.0270
22.5	-0.0029	-0.0029	-0.0029	0.0091	0.0032	0.0032	0.0091	0.0150	-0.0088	-0.0088	-0.0032	-0.0039	-0.0039	0.0032	0.0031	0.0270
45.0	-0.0029	-0.0029	-0.0029	0.0091	0.0032	0.0032	0.0209	0.0150	-0.0088	-0.0088	-0.0029	-0.0029	-0.0029	0.0150	0.0232	0.0284
67.5	-0.0029	-0.0029	0.0032	0.0032	0.0032	0.0150	0.0209	0.0329	-0.0029	0.0032	0.0091	0.0032	0.0032	0.0209	0.0150	0.0388
112.5	-0.0147	-0.0088	0.0032	0.0032	0.0091	0.0091	0.0150	0.0388	-0.0205	-0.0088	0.0032	0.0032	0.0150	0.0091	0.0209	0.0447
135.0	-0.0264	-0.0029	0.0091	0.0032	0.0091	0.0032	0.0270	0.0306	-0.0325	-0.0029	0.0091	0.0032	0.0150	0.0032	0.0329	0.0584
157.5	-0.0183	-0.0029	0.0010	0.0032	0.0091	0.0091	0.0150	0.0346	-0.0443	-0.0029	0.0091	0.0032	0.0150	0.0032	0.0329	0.0584
180.0	-0.0563	0.0032	0.0032	0.0032	0.0032	0.0150	0.0209	0.0329	-0.0859	0.0270	0.0209	0.0091	0.0091	0.0032	0.0329	0.0209
202.5	-0.0443	-0.0088	0.0032	0.0032	0.0032	0.0150	0.0209	0.0329	-0.0443	-0.0029	0.0091	0.0032	0.0150	0.0032	0.0329	0.0584
225.0	-0.0325	-0.0088	-0.0029	-0.0029	0.0032	0.0032	0.0150	0.0306	-0.0325	-0.0088	-0.0088	-0.0029	-0.0029	-0.0029	0.0091	0.0447
247.5	-0.0147	0.0032	0.0032	0.0091	-0.0029	0.0091	0.0032	0.0270	-0.0263	-0.0087	-0.0087	-0.0027	-0.0027	-0.0027	0.0032	0.0091
270.0	-0.0029	-0.0029	0.0032	0.0032	0.0091	0.0091	0.0150	0.0388	-0.0087	-0.0087	-0.0027	-0.0027	0.0032	0.0091	0.0268	0.0268
315.0	-0.0088	0.0032	0.0032	0.0150	-0.0029	0.0209	0.0209	0.0743	-0.0147	-0.0087	-0.0027	0.0032	-0.0027	0.0149	-0.0044	
337.5	0.0032	-0.0088	-0.0029	0.0032	0.0150	0.0532	0.0209		-0.0087	-0.0087	-0.0087	-0.0027	0.0032	-0.0027	0.0091	
$\alpha = 0^\circ$; $w = 0.019$																
0.0	-0.0029	-0.0088	-0.0029	0.0032	0.0032	0.0032	0.0150	0.0329	-0.0086	-0.0086	-0.0086	-0.0027	0.0032	0.0032	0.0093	0.0153
22.5	-0.0029	-0.0029	0.0091	0.0032	0.0032	0.0091	0.0150	0.0329	-0.0205	-0.0205	-0.0086	-0.0205	-0.0086	0.0032	0.0153	
45.0	-0.0029	-0.0029	-0.0029	0.0032	0.0032	0.0032	0.0209	0.0150	-0.0266	-0.0266	-0.0266	-0.0205	-0.0205	0.0032	-0.0146	
67.5	-0.0029	-0.0029	-0.0029	0.0032	0.0032	0.0032	0.0150	0.0329	-0.0086	-0.0032	-0.0153	-0.0153	-0.0153	0.0153	0.0392	
112.5	-0.0209	-0.0088	-0.0029	0.0032	0.0091	0.0032	0.0150	0.0388	-0.0266	-0.0153	0.0153	0.0153	0.0153	0.0153	0.0333	0.0531
135.0	-0.0325	-0.0029	0.0032	0.0032	0.0091	0.0032	0.0270	0.0566	-0.0266	-0.0153	0.0153	0.0153	0.0153	0.0153	0.0392	0.0531
157.5	-0.0502	0.0091	0.0150	0.0091	0.0091	0.0032	0.0209	0.0270	-0.0564	-0.0093	0.0212	0.0212	0.0212	0.0212	0.0392	0.0511
180.0	-0.0622	0.0091	0.0091	0.0091	0.0091	0.0032	0.0209	0.0209	-0.1221	-0.0153	0.0153	0.0153	0.0153	0.0153	0.0212	0.0212
202.5	-0.0443	-0.0044	0.0150	0.0032	0.0032	0.0032	0.0150	0.0329	-0.0502	-0.0146	-0.0146	-0.0146	-0.0146	-0.0146	-0.0027	0.0212
225.0	-0.0044	-0.0029	-0.0029	0.0032	-0.0029	0.0091	-0.0029	0.0209	-0.0443	-0.0086	-0.0086	-0.0086	-0.0086	-0.0086	-0.027	0.0212
247.5	-0.0147	-0.0029	-0.0029	0.0032	-0.0029	0.0091	-0.0029	0.0270	-0.0263	-0.0145	-0.0086	-0.0027	-0.0027	-0.0027	-0.0034	
292.5	-0.0088	-0.0088	-0.0029	-0.0029	0.0032	-0.0032	0.0091	-0.0029	-0.0027	-0.0027	-0.0027	0.0034	0.0034	0.0034	0.0152	
315.0	-0.0088	-0.0029	-0.0029	0.0091	-0.0029	0.0021	-0.0029	0.0629	-0.0027	-0.0027	0.0093	0.0211	0.0034	0.0211	0.0586	
337.5	-0.0029	-0.0088	-0.0088	-0.0029	0.0091	-0.0029	0.0150		-0.0086	-0.0086	-0.0086	-0.0027	0.0034	-0.0027	0.0034	
$\alpha = 0^\circ$; $w = 0.019$																
0.0	-0.0027	-0.0086	-0.0086	0.0034	0.0034	0.0034	0.0152	0.0272	-0.0147	-0.0147	-0.0147	-0.0147	-0.0088	-0.0032		
22.5	-0.0086	-0.0205	0.0093	-0.0027	-0.0027	0.0093	0.0152	0.0331	-0.0443	-0.0384	-0.0325	-0.0384	-0.0325	-0.0205	-0.0147	-0.0088
45.0	-0.0027	-0.0027	0.0093	-0.0027	-0.0027	0.0093	0.0152	0.0329	-0.0622	-0.0622	-0.0563	-0.0563	-0.0563	-0.0325	-0.0443	0.0329
67.5	-0.0205	-0.0086	-0.0027	0.0034	-0.0034	0.0034	0.0152	0.0329	-0.0502	-0.0502	-0.0384	-0.0325	-0.0325	-0.0205	-0.0147	0.0091
112.5	-0.0323	-0.0027	0.0093	0.0032	0.0152	0.0034	0.0331	0.0627	-0.0205	-0.0205	-0.0388	-0.0388	-0.0388	0.0329	0.0443	0.0743
135.0	-0.0500	0.0093	0.0152	0.0093	0.0093	0.0034	0.0272	0.0331	-0.0622	-0.0091	0.0270	0.0329	0.0270	0.0270	0.0447	0.0564
157.5	-0.0641	-0.0027	0.0093	-0.0027	0.0093	0.0034	0.0211	0.0211	-0.1453	-0.0032	0.0032	-0.0029	-0.0029	-0.0029	0.0091	
180.0	-0.0323	-0.0027	0.0093	-0.0027	0.0093	0.0034	0.0272	0.0331	-0.0681	-0.0384	-0.0443	-0.0443	-0.0443	-0.0502	-0.0325	-0.0088
202.5	-0.0323	-0.0027	-0.0027	0.0032	-0.0027	0.0091	-0.0029	0.0209	-0.0247	-0.0622	-0.0622	-0.0622	-0.0622	-0.0622	-0.0384	
225.0	-0.0145	-0.0027	-0.0027	0.0032	-0.0027	0.0091	-0.0029	0.0210	-0.0247	-0.0247	-0.0622	-0.0622	-0.0622	-0.0622	-0.0384	
247.5	-0.0086	-0.0027	0.0032	-0.0027	0.0091	0.0091	0.0210	0.0567	-0.0385	-0.0385	-0.0326	-0.0326	-0.0267	-0.0267	-0.0206	
292.5	-0.0086	-0.0032	0.0032	0.0091	-0.0027	0.0210	0.0567		-0.0029	0.0149	0.0090	0.0208	0.0030	0.0149	0.0083	
315.0	-0.0027	-0.0088	-0.0027	0.0032	0.0091	0.0032	0.0151		-0.0385	-0.0504	-0.0445	-0.0326	-0.0267	-0.0326	-0.0147	

TABLE IV.-Continued.

(e) $\beta = 45^\circ$; $M = 1.00$.

TABLE IV.- Concluded.

(0°, g = 45°; M = 1.03)

θ, deg	$(p - p_m)/p_m$ for longitudinal station								$(p - p_m)/p_m$ for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha=0^\circ; w=0.019$																
0.0	-0.0288	-0.0220	-0.0288	-0.0288	-0.0421	-0.0154	0.0911	0.1376	-0.0220	-0.0220	-0.0286	-0.0353	-0.0419	-0.0151	0.0786	0.1254
22.5	-0.0288	-0.0220	-0.0288	-0.0354	-0.0487	-0.0088	0.0911	0.1376	-0.0353	-0.0286	-0.0220	-0.0419	-0.0486	-0.0286	0.0720	0.1323
45.0	-0.0288	-0.0220	-0.0288	-0.0354	-0.0487	-0.0088	0.0911	0.1376	-0.0353	-0.0286	-0.0220	-0.0419	-0.0486	-0.0286	0.0452	0.0791
67.5	-0.0154	-0.0220	-0.0288	-0.0354	-0.0354	-0.0046	0.0911	0.1376	-0.0088	-0.0220	-0.0286	-0.0353	-0.0353	-0.0353	0.0131	0.0711
112.5	-0.0621	-0.0621	-0.0421	-0.0421	-0.0354	-0.0088	0.0843	0.1376	-0.0555	-0.0688	-0.0353	-0.0353	-0.0220	-0.0220	0.0250	0.1496
135.0	-0.1085	-0.0553	-0.0288	-0.0421	-0.0288	-0.0088	0.0911	0.1510	-0.1291	-0.0621	-0.0220	-0.0419	-0.0151	-0.0286	0.0385	0.1658
157.5	-0.0687	-0.0421	-0.0220	-0.0220	-0.0288	-0.0088	0.0911	0.1310	-0.0956	-0.0486	-0.0151	-0.0151	-0.0220	-0.0286	0.0317	0.1323
180.0	-0.0687	-0.0421	-0.0220	-0.0220	-0.0288	-0.0088	0.0911	0.1310	-0.1022	-0.0421	-0.0151	-0.0151	-0.0220	-0.0286	0.0385	0.1188
202.5	-0.1219	-0.0553	-0.0288	-0.0288	-0.0354	-0.0154	0.0911	0.1410	-0.1477	-0.0555	-0.0384	-0.0384	-0.0419	-0.0419	0.0493	0.1049
225.0	-0.0687	-0.0621	-0.0288	-0.0288	-0.0421	-0.0088	0.0843	0.1510	-0.0556	-0.0555	-0.0419	-0.0353	-0.0419	-0.0286	0.0518	0.1496
247.5	-0.0351	-0.0483	-0.0351	-0.0284	-0.0417	-0.0084	0.0781	0.1314	-0.0619	-0.0484	-0.0351	-0.0284	-0.0418	-0.0149	0.0587	0.1123
270.0	-0.0284	-0.0216	-0.0284	-0.0417	-0.0351	-0.0084	0.0847	0.1380	-0.0284	-0.0284	-0.0218	-0.0351	-0.0284	-0.0016	0.0855	0.1325
315.0	-0.0284	-0.0216	-0.0216	-0.0417	-0.0284	-0.0216	0.0915	0.1647	-0.0218	-0.0218	-0.0218	-0.0284	-0.0016	0.0855	0.1488	
337.5	-0.0284	-0.0216	-0.0216	-0.0284	-0.0351	-0.0216	0.0915		-0.0218	-0.0218	-0.0284	-0.0284	-0.0016	0.0855		
$\alpha=2.0^\circ; w=0.019$																
0.0	-0.0284	-0.0216	-0.0351	-0.0351	-0.0417	-0.0050	0.0982	0.1314	-0.0351	-0.0284	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
22.5	-0.0351	-0.0284	-0.0216	-0.0417	-0.0417	-0.0483	-0.0018	0.0915	0.1314	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855
45.0	-0.0216	-0.0284	-0.0417	-0.0417	-0.0483	-0.0116	0.0915	0.1713	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
67.5	-0.0216	-0.0284	-0.0417	-0.0417	-0.0483	-0.0116	0.0915	0.1713	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
112.5	-0.0617	-0.0693	-0.0417	-0.0417	-0.0284	-0.0216	0.0781	0.1446	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
135.0	-0.1282	-0.0617	-0.0284	-0.0417	-0.0284	-0.0216	0.0781	0.1647	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
157.5	-0.0950	-0.0483	-0.0216	-0.0216	-0.0216	-0.0216	0.0915	0.1380	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
180.0	-0.1016	-0.0284	-0.0216	-0.0284	-0.0284	-0.0150	0.0847	0.1248	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
202.5	-0.0883	-0.0617	-0.0417	-0.0417	-0.0284	-0.0116	0.0847	0.1514	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
225.0	-0.0419	-0.0617	-0.0417	-0.0284	-0.0353	-0.0117	0.0915	0.1323	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
247.5	-0.0220	-0.0220	-0.0220	-0.0353	-0.0286	-0.0184	0.0920	0.1456	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
270.0	-0.0220	-0.0220	-0.0220	-0.0353	-0.0286	-0.0117	0.1055	0.1591	-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	0.1325
315.0	-0.0220	-0.0220	-0.0220	-0.0353	-0.0286	0.0117	0.1055		-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	
337.5	-0.0220	-0.0220	-0.0220	-0.0353	-0.0286	0.0117	0.1055		-0.0216	-0.0216	-0.0216	-0.0351	-0.0417	-0.0050	0.0855	

TABLE V.- Continued.

(b) $\beta = 90^\circ$; $M = 0.80$.

θ , deg	$(p - p_m)/p_m$ for longitudinal station								$(p - p_m)/p_m$ for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
	$\alpha = -2, 0^\circ$								$\alpha = 8, 0^\circ$							
0.0	-0.0018	-0.0069	-0.0069	-0.0018	-0.0069	-0.0018	0.0034	0.0134	-0.0321	-0.0321	-0.0321	-0.0321	-0.0321	-0.0220	-0.0169	-0.0169
22.5	-0.0069	-0.0069	0.0084	-0.0069	-0.0018	-0.0018	0.0034	0.0134	-0.0321	-0.0271	-0.0169	-0.0271	-0.0271	-0.0220	-0.0169	-0.0169
45.0	-0.0018	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0034	0.0287	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0068	0.0337	0.0337
67.5	-0.0069	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0034	0.0286	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	0.0084	0.036	0.036
112.5	-0.0119	-0.0119	-0.0069	-0.0018	-0.0018	-0.0018	0.0034	0.0186	-0.0068	-0.0119	-0.0017	0.0033	0.0033	0.0084	0.0257	0.0257
135.0	-0.0171	-0.0069	-0.0018	-0.0069	-0.0018	-0.0018	0.0084	0.0287	-0.0321	-0.0169	-0.0119	-0.0119	-0.0119	0.0084	0.0337	0.0337
157.5	-0.0222	0.0084	0.0034	0.0084	-0.0018	-0.0018	0.0084	0.0134	-0.0727	-0.0321	-0.0220	-0.0220	-0.0321	-0.0119	-0.0169	-0.0169
180.0	-0.0272	-0.0018	-0.0018	-0.0018	-0.0018	-0.0069	0.0084	0.0034	-0.0727	-0.0220	-0.0220	-0.0271	-0.0321	-0.0169	-0.0220	-0.0220
202.5	-0.0322	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0084	0.0134	-0.0220	-0.0169	-0.0119	-0.0119	-0.0119	-0.0168	-0.0068	-0.0068
225.0	-0.0371	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0084	0.0287	-0.0119	-0.0069	-0.0069	-0.0119	-0.0119	-0.0119	-0.0069	-0.0069
247.5	-0.0417	-0.0066	-0.0014	0.0037	-0.0014	0.0037	-0.0014	0.0138	-0.0119	-0.0119	-0.0119	-0.0069	-0.0069	-0.0069	-0.0019	-0.0019
292.5	-0.0466	-0.0066	-0.0014	-0.0014	-0.0014	-0.0014	0.0034	0.0337	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0069	-0.0069	-0.0018
315.0	-0.0517	-0.0066	-0.0066	-0.0014	-0.0014	-0.0014	0.0066	0.0337	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0069	-0.0069	-0.0018
337.5	-0.0666	-0.0117	-0.0066	-0.0066	-0.0014	-0.0014	0.0037	0.0393	-0.0222	-0.0272	-0.0222	-0.0171	-0.0222	-0.0119	-0.0134	-0.0134
	$\alpha = 0^\circ$								$\alpha = 12, 0^\circ$							
0.0	-0.0018	-0.0069	-0.0069	-0.0018	-0.0018	-0.0018	0.0034	0.0134	-0.0625	-0.0676	-0.0676	-0.0575	-0.0575	-0.0625	-0.0524	-0.0524
22.5	-0.0069	-0.0018	0.0084	-0.0018	-0.0018	0.0034	0.0034	0.0134	-0.0572	-0.0524	-0.0572	-0.0524	-0.0524	-0.0423	-0.0423	-0.0423
45.0	-0.0018	-0.0018	-0.0018	-0.0018	-0.0018	0.0034	0.0034	0.0134	-0.0220	-0.0230	-0.0230	-0.0230	-0.0230	-0.0189	-0.0189	-0.0189
67.5	-0.0069	-0.0069	-0.0119	-0.0018	-0.0018	0.0034	0.0134	0.0134	-0.0084	-0.0033	-0.0135	-0.0084	-0.0084	0.0185	0.0388	0.0388
112.5	-0.0069	-0.0069	-0.0119	-0.0069	-0.0018	0.0034	0.0186	0.0033	-0.0033	-0.0017	0.0033	0.0084	0.0135	0.0084	0.0185	0.0185
135.0	-0.0022	-0.0065	-0.0018	-0.0069	-0.0018	0.0069	0.0084	0.0287	-0.0423	-0.0321	-0.0220	-0.0271	-0.0169	-0.0271	-0.0017	0.0236
157.5	-0.0171	-0.0018	-0.0018	-0.0018	-0.0018	0.0069	0.0034	0.0134	-0.0451	-0.0676	-0.0524	-0.0473	-0.0575	-0.0372	-0.0473	-0.0473
180.0	-0.0222	-0.0069	-0.0018	-0.0018	-0.0018	0.0069	0.0034	0.0134	-0.0524	-0.0321	-0.0231	-0.0372	-0.0372	-0.0473	-0.0372	-0.0372
202.5	-0.0319	-0.0069	-0.0069	-0.0018	-0.0018	0.0069	0.0034	0.0237	-0.0321	-0.0271	-0.0220	-0.0163	-0.0169	-0.0169	-0.0169	-0.0169
225.0	-0.0406	-0.0066	-0.0066	-0.0014	-0.0014	0.0037	0.0037	0.0087	-0.0473	-0.0423	-0.0423	-0.0372	-0.0423	-0.0372	-0.0423	-0.0423
247.5	-0.0466	-0.0066	-0.0014	-0.0014	-0.0014	0.0037	0.0014	0.0393	-0.0423	-0.0473	-0.0423	-0.0423	-0.0423	-0.0423	-0.0423	-0.0423
292.5	-0.0517	-0.0066	-0.0014	-0.0014	-0.0014	0.0037	0.0014	0.0393	-0.0423	-0.0423	-0.0423	-0.0372	-0.0372	-0.0372	-0.0372	-0.0372
315.0	-0.0666	-0.0117	-0.0014	-0.0014	-0.0014	0.0037	-0.0014	0.0393	-0.0423	-0.0423	-0.0423	-0.0372	-0.0372	-0.0372	-0.0372	-0.0372
337.5	-0.0666	-0.0066	-0.0014	-0.0014	-0.0014	0.0037	-0.0014	0.0393	-0.0423	-0.0423	-0.0423	-0.0372	-0.0372	-0.0372	-0.0372	-0.0372
	$\alpha = 2, 0^\circ$								$\alpha = 14, 9^\circ$							
0.0	-0.0069	-0.0069	-0.0069	-0.0018	-0.0018	0.0034	0.0084	-0.0833	-0.0833	-0.0833	-0.0782	-0.0782	-0.0730	-0.0730	-0.0730	-0.0730
22.5	-0.0069	-0.0069	-0.0069	-0.0018	-0.0018	0.0034	0.0134	-0.0782	-0.0730	-0.0527	-0.0730	-0.0730	-0.0629	-0.0629	-0.0680	-0.0680
45.0	-0.0069	-0.0069	-0.0069	-0.0018	-0.0018	0.0034	0.0134	-0.0572	-0.0272	-0.0472	-0.0222	-0.0222	-0.0222	-0.0171	-0.0171	-0.0287
67.5	-0.0018	-0.0018	0.0034	-0.0018	-0.0018	0.0084	0.0186	-0.056	-0.056	-0.056	-0.056	-0.056	-0.0287	0.0452	0.0452	0.0452
112.5	-0.0119	-0.0119	-0.0018	-0.0018	-0.0018	0.0034	0.0237	-0.0134	-0.0134	-0.0134	-0.0134	-0.0134	-0.0237	0.0287	0.0287	0.0287
135.0	-0.0222	-0.0119	-0.0018	-0.0069	-0.0018	0.0034	0.0134	-0.0423	-0.0374	-0.0222	-0.0272	-0.0171	-0.0272	-0.0069	0.0237	0.0237
157.5	-0.0319	-0.0119	-0.0018	-0.0069	-0.0018	0.0034	0.0134	-0.0421	-0.04883	-0.0730	-0.0622	-0.0730	-0.0579	-0.0730	-0.0730	-0.0730
180.0	-0.0417	-0.0119	-0.0018	-0.0069	-0.0018	0.0034	0.0134	-0.0241	-0.0272	-0.0272	-0.0171	-0.0473	-0.0372	-0.0372	-0.0372	-0.0372
202.5	-0.0517	-0.0119	-0.0018	-0.0069	-0.0018	0.0034	0.0134	-0.0387	-0.0272	-0.0272	-0.0171	-0.0473	-0.0372	-0.0372	-0.0372	-0.0372
225.0	-0.0666	-0.0119	-0.0018	-0.0069	-0.0018	0.0034	0.0084	-0.0374	-0.0272	-0.0171	-0.0171	-0.0473	-0.0372	-0.0372	-0.0372	-0.0372
247.5	-0.0722	-0.0119	-0.0069	-0.0069	-0.0119	-0.0018	0.0084	-0.0374	-0.0272	-0.0171	-0.0171	-0.0473	-0.0372	-0.0372	-0.0372	-0.0372
292.5	-0.0819	-0.0119	-0.0069	-0.0069	-0.0119	-0.0018	0.0084	-0.0679	-0.0578	-0.0527	-0.0425	-0.0425	-0.0271	-0.0221	-0.0221	-0.0221
315.0	-0.0906	-0.0119	-0.0069	-0.0069	-0.0119	-0.0018	0.0084	-0.0629	-0.0527	-0.0527	-0.0425	-0.0425	-0.0271	-0.0211	-0.0211	-0.0211
337.5	-0.0119	-0.0119	-0.0069	-0.0069	-0.0119	-0.0018	0.0084	-0.0425	-0.0425	-0.0425	-0.0374	-0.0374	-0.0323	-0.0271	-0.0271	-0.0271

TABLE V. - Continued.

(c) $\beta = 90^\circ$; $M = 0.00$.

θ , deg	$(p - p_m)/p_m$ for longitudinal station								$(p - p_m)/p_m$ for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha = -2.0^\circ$																
0.0	-0.0007	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0120	0.0232	-0.0334	-0.0389	-0.0389	-0.0334	-0.0334	-0.0221	-0.0165	
22.5	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0334	-0.0334	-0.0277	-0.0277	-0.0221	-0.0165	-0.0052	
45.0	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0007	0.0063	0.0460	-0.0108	-0.0108	-0.0108	-0.0108	-0.0108	-0.0052	0.0567	
67.5	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	0.0061	0.0061	0.0116	0.0061	0.0172	0.0398		
112.5	-0.0116	-0.0049	-0.0049	0.0003	0.0003	0.0003	0.0063	0.0232	-0.0108	-0.0108	0.0161	0.0061	0.0172	0.0398		
135.0	-0.0219	-0.0049	-0.0049	0.0063	0.0063	0.0007	0.0176	0.0462	-0.0558	-0.0558	-0.0052	-0.0052	-0.0165	0.0456	0.0364	
157.5	-0.0446	0.0176	0.0120	0.0120	0.0063	0.0007	0.0176	0.0232	-0.1120	-0.0445	-0.0277	-0.0221	-0.0334	-0.0165	-0.0108	
180.0	-0.0446	0.0007	0.0007	0.0007	0.0007	0.0049	0.0176	0.0120	-0.1345	-0.0221	-0.0277	-0.0334	-0.0389	-0.0165	-0.0221	
202.5	-0.0332	-0.0049	0.0007	0.0007	0.0007	0.0049	0.0063	0.0290	-0.0558	-0.0221	-0.0221	-0.0221	-0.0277	-0.0165	-0.0052	
225.0	-0.0193	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0275	-0.0165	-0.0165	-0.0108	-0.0052	0.0116		
247.5	-0.0053	0.0003	0.0059	0.0113	0.0003	0.0115	0.0059	0.0227	-0.0164	-0.0164	-0.0108	-0.0108	-0.0052	-0.0052	0.0005	
292.5	0.0003	-0.0053	0.0003	0.0003	0.0059	0.0115	0.0285		-0.0108	-0.0108	-0.0108	-0.0108	-0.0052	-0.0052	0.0111	
315.0	-0.0053	0.0059	0.0003	0.0115	0.0003	0.0171	0.0565		-0.0164	-0.0108	-0.0108	-0.0052	-0.0052	0.0061	0.0230	
337.5	0.0003	-0.0053	-0.0053	0.0059	0.0115	0.0003	0.0171		-0.0220	-0.0276	-0.0276	-0.0220	-0.0164	-0.0052		
$\alpha = 8.0^\circ$																
0.0	-0.0049	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0120	0.0232	-0.0669	-0.0725	-0.0725	-0.0669	-0.0669	-0.0501	-0.0501	
22.5	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0669	-0.0612	-0.0556	-0.0612	-0.0612	-0.0444	-0.0388	
45.0	-0.0049	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0063	0.0516	-0.0219	-0.0219	-0.0164	-0.0164	-0.0164	-0.0106	0.0511	
67.5	-0.0049	-0.0049	0.0063	0.0007	0.0007	0.0120	0.0232	0.0174	0.0118	0.0231	0.0174	0.0174	0.0287	0.0568		
112.5	-0.0163	-0.0107	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	0.0174	-0.0055	-0.0055	-0.0055	-0.0055	-0.0287	0.0568	
135.0	-0.0163	-0.0107	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0725	-0.0164	-0.0275	-0.0164	-0.0275	-0.0355	0.0355	
157.5	-0.0388	0.0120	0.0063	0.0063	0.0063	0.0007	0.0176	0.0232	-0.1400	-0.0781	-0.0556	-0.0444	-0.0501	-0.0612	-0.0332	
202.5	-0.0388	0.0063	0.0063	0.0063	0.0063	0.0007	0.0176	0.0232	-0.1737	-0.0556	-0.0556	-0.0556	-0.0556	-0.0444	-0.0356	
225.0	-0.0332	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0612	-0.0219	-0.0219	-0.0332	-0.0388	-0.0444	-0.0332	
247.5	-0.0219	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0063	0.0402	-0.0388	-0.0164	-0.0164	-0.0164	-0.0106	-0.0051	0.0118	
270.5	-0.0108	-0.0052	-0.0052	-0.0052	0.0005	0.0005	0.0063	0.0230	-0.0298	-0.0445	-0.0389	-0.0389	-0.0389	-0.0445	-0.0344	
292.5	-0.0052	-0.0108	-0.0052	-0.0052	-0.0052	0.0061	0.0059	0.0511	-0.0445	-0.0220	-0.0164	-0.0164	-0.0108	-0.0164	-0.0052	
315.0	-0.0052	-0.0108	-0.0052	0.0005	0.0061	-0.0052	0.0117		-0.0389	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
337.5	-0.0052	-0.0108	-0.0052	0.0005	0.0061	-0.0052	0.0117		-0.0389	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
$\alpha = 0^\circ$																
0.0	-0.0049	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0120	0.0232	-0.0669	-0.0725	-0.0725	-0.0669	-0.0669	-0.0501	-0.0501	
22.5	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0669	-0.0612	-0.0556	-0.0612	-0.0612	-0.0444	-0.0388	
45.0	-0.0049	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0063	0.0516	-0.0219	-0.0219	-0.0164	-0.0164	-0.0164	-0.0106	0.0511	
67.5	-0.0049	-0.0049	0.0063	0.0007	0.0007	0.0120	0.0232	0.0174	0.0118	0.0231	0.0174	0.0174	0.0287	0.0568		
112.5	-0.0163	-0.0107	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	0.0174	-0.0055	-0.0055	-0.0055	-0.0055	-0.0287	0.0568	
135.0	-0.0388	0.0120	0.0063	0.0063	0.0063	0.0007	0.0176	0.0232	-0.1400	-0.0781	-0.0556	-0.0444	-0.0501	-0.0612	-0.0332	
157.5	-0.0388	0.0063	0.0063	0.0063	0.0063	0.0007	0.0176	0.0232	-0.1737	-0.0556	-0.0556	-0.0556	-0.0556	-0.0444	-0.0356	
202.5	-0.0332	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0612	-0.0219	-0.0219	-0.0332	-0.0388	-0.0444	-0.0332	
225.0	-0.0219	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0063	0.0402	-0.0388	-0.0164	-0.0164	-0.0164	-0.0106	-0.0051	0.0118	
247.5	-0.0108	-0.0052	-0.0052	-0.0052	0.0005	0.0005	0.0063	0.0230	-0.0298	-0.0445	-0.0389	-0.0389	-0.0389	-0.0445	-0.0344	
270.5	-0.0052	-0.0108	-0.0052	-0.0052	-0.0052	0.0061	0.0493		-0.0445	-0.0220	-0.0164	-0.0164	-0.0108	-0.0164	-0.0052	
292.5	-0.0108	-0.0052	-0.0052	0.0005	0.0005	-0.0052	0.0061		-0.0389	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
315.0	-0.0108	-0.0108	-0.0052	0.0005	0.0005	-0.0052	0.0061		-0.0445	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
337.5	-0.0108	-0.0108	-0.0052	0.0005	0.0005	-0.0052	0.0061		-0.0389	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
$\alpha = 12.0^\circ$																
0.0	-0.0049	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0120	0.0232	-0.0669	-0.0725	-0.0725	-0.0669	-0.0669	-0.0501	-0.0501	
22.5	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0669	-0.0612	-0.0556	-0.0612	-0.0612	-0.0444	-0.0388	
45.0	-0.0049	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0063	0.0516	-0.0219	-0.0219	-0.0164	-0.0164	-0.0164	-0.0106	0.0511	
67.5	-0.0049	-0.0049	0.0063	0.0007	0.0007	0.0120	0.0232	0.0174	0.0118	0.0231	0.0174	0.0174	0.0287	0.0568		
112.5	-0.0163	-0.0107	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	0.0174	-0.0055	-0.0055	-0.0055	-0.0055	-0.0287	0.0568	
135.0	-0.0388	0.0120	0.0063	0.0063	0.0063	0.0007	0.0176	0.0232	-0.1400	-0.0781	-0.0556	-0.0444	-0.0501	-0.0612	-0.0332	
157.5	-0.0388	0.0063	0.0063	0.0063	0.0063	0.0007	0.0176	0.0232	-0.1737	-0.0556	-0.0556	-0.0556	-0.0556	-0.0444	-0.0356	
202.5	-0.0332	-0.0049	0.0007	0.0007	0.0007	0.0007	0.0063	0.0232	-0.0612	-0.0219	-0.0219	-0.0332	-0.0388	-0.0444	-0.0332	
225.0	-0.0219	-0.0049	-0.0049	0.0007	0.0007	0.0007	0.0063	0.0402	-0.0388	-0.0164	-0.0164	-0.0164	-0.0106	-0.0051	0.0118	
247.5	-0.0108	-0.0052	-0.0052	-0.0052	0.0005	0.0005	0.0063	0.0230	-0.0298	-0.0445	-0.0389	-0.0389	-0.0389	-0.0445	-0.0344	
270.5	-0.0052	-0.0108	-0.0052	-0.0052	-0.0052	0.0061	0.0493		-0.0445	-0.0220	-0.0164	-0.0164	-0.0108	-0.0164	-0.0052	
292.5	-0.0108	-0.0052	-0.0052	0.0005	0.0005	-0.0052	0.0061		-0.0389	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
315.0	-0.0108	-0.0108	-0.0052	0.0005	0.0005	-0.0052	0.0061		-0.0445	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
337.5	-0.0108	-0.0108	-0.0052	0.0005	0.0005	-0.0052	0.0061		-0.0389	-0.0445	-0.0389	-0.0333	-0.0276	-0.0333	-0.0220	
$\alpha = 15.1^\circ$																
0.0	-0.0106	-0.0164	-0.0106	-0.0106	-0.0106	0.0005	0.0118		-0.1008	-0.1064	-0.1064	-0.0951	-0.0951	-0.0951	-0.0840	
22.5	-0.0106	-0.0164	-0.0106	-0.0106	-0.0106	-0.0051	0.0005		-0.0951	-0.0840	-0.0727	-0.0671	-0.0671	-0.0727		
45.0	-0.0106	-0.0164	-0.0106	-0.0106	-0.0106	-0.0051	0.0005		-0.0951	-0.0840	-0.0727	-0.0671	-0.0671	-0.0727		
67.5																

TABLE V.—Continued

(d) $\theta = 90^\circ$; $M = 0.95$

θ, deg	(p - p _{mo}) / p _{mo} for longitudinal station								(p - p _{mo}) / p _{mo} for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha = 2.0^\circ$																
0.0	-0.0027	-0.0027	-0.0027	0.0032	0.0032	0.0032	0.0211	0.0331	-0.0326	-0.0326	-0.0385	-0.0267	-0.0267	-0.0267	-0.0088	-0.0027
22.5	-0.0027	-0.0027	0.0211	0.0032	0.0032	0.0091	0.0152	0.0391	-0.0326	-0.0267	-0.0027	-0.0267	-0.0267	-0.0147	-0.0088	-0.0029
45.0	-0.0032	0.0032	0.0032	0.0032	0.0091	0.0152	0.0211	0.0570	-0.0088	-0.0088	-0.0088	-0.0027	-0.0027	-0.0027	-0.0032	0.0008
67.5	-0.0027	-0.0027	0.0032	0.0032	0.0091	0.0152	0.0211	0.0531	-0.0152	0.0091	0.0271	0.0211	0.0152	0.0331	0.0629	
112.5	-0.0147	-0.0027	0.0032	0.0032	0.0091	0.0091	0.0211	0.0591	-0.0206	-0.0088	0.0152	0.0152	0.0211	0.0152	0.0271	0.0629
135.0	-0.0027	-0.0027	0.0032	0.0032	0.0091	0.0091	0.0211	0.0531	-0.0152	0.0091	0.0271	0.0211	0.0152	0.0331	0.0629	
157.5	-0.0025	0.0211	0.0211	0.0211	0.0152	0.0032	0.0211	0.0331	-0.1521	0.0326	-0.0147	-0.0088	-0.0147	-0.0147	-0.0267	0.0332
180.0	-0.0064	-0.0027	0.0091	0.0091	0.0091	0.0032	0.0211	0.0211	-0.1639	-0.0088	-0.0147	-0.0206	-0.0326	-0.0207	-0.0088	-0.0048
202.5	-0.0046	-0.0027	0.0091	0.0091	0.0091	0.0032	0.0152	0.0331	-0.0364	-0.0147	-0.0088	-0.0147	-0.0147	-0.0206	-0.0088	0.0091
225.0	-0.0267	-0.0027	-0.0027	0.0091	0.0032	0.0091	0.0152	0.0570	-0.0264	-0.0088	-0.0088	-0.0088	-0.0027	-0.0027	0.0091	0.0271
247.5	-0.0027	-0.0027	0.0031	0.0031	0.0031	0.0031	0.0151	0.0331	-0.0026	-0.0026	-0.0026	-0.0026	-0.0088	-0.0088	-0.0027	0.0091
270.0	0.0071	-0.0029	0.0031	0.0031	0.0031	0.0092	0.0052	0.0151	0.0390	-0.0048	-0.0088	-0.0088	-0.0088	-0.0032	-0.0032	0.0091
292.5	-0.0088	0.0031	0.0031	0.0031	0.0092	0.0031	0.0210	0.0748	0.0361	0.0556	0.0556	0.0686	0.0622	0.0750	0.1010	
315.0	0.0031	-0.0029	-0.0029	0.0031	0.0151	0.0031	0.0210		0.0361	0.0297	0.0361	0.0427	0.0556	0.0492	0.0622	
337.5																
$\alpha = 5.0^\circ$																
0.0	-0.0032	-0.0027	-0.0027	0.0032	0.0032	0.0032	0.0211	0.0331	-0.0326	-0.0326	-0.0385	-0.0267	-0.0267	-0.0267	-0.0088	-0.0027
22.5	-0.0027	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0211	0.0331	-0.0326	-0.0267	-0.0027	-0.0267	-0.0267	-0.0147	-0.0046	-0.0029
45.0	-0.0027	-0.0027	0.0091	0.0091	0.0032	0.0152	0.0211	0.0629	-0.0147	-0.0206	-0.0147	-0.0088	-0.0147	-0.0147	-0.0032	0.0074
67.5	-0.0027	-0.0027	0.0091	0.0091	0.0032	0.0152	0.0211	0.0391	0.0211	0.0211	0.0331	0.0331	0.0271	0.0450	0.0808	
112.5	-0.0206	-0.0088	0.0032	0.0032	0.0091	0.0091	0.0152	0.0450	-0.0330	-0.0147	0.0271	0.0271	0.0331	0.0331	0.0391	0.0808
135.0	-0.0032	-0.0027	0.0091	-0.0027	0.0091	0.0032	0.0271	0.0570	-0.0394	-0.0046	-0.0027	-0.0206	0.0332	-0.0147	0.0211	0.0690
157.5	-0.0064	0.0152	0.0152	0.0152	0.0152	0.0032	0.0271	0.0570	-0.0206	-0.0088	-0.0088	-0.0088	-0.0046	-0.0046	-0.0267	0.0627
180.0	-0.0027	-0.0027	0.0152	0.0152	0.0152	0.0032	0.0271	0.0571	-0.0206	-0.0046	-0.0046	-0.0046	-0.0088	-0.0088	-0.0267	0.0627
202.5	-0.0385	-0.0032	0.0091	0.0091	0.0091	0.0032	0.0152	0.0331	-0.0385	-0.0147	-0.0088	-0.0206	-0.0326	-0.0385	-0.0206	-0.0027
225.0	-0.0267	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0152	0.0511	-0.0326	-0.0147	-0.0088	-0.0207	-0.0027	-0.0027	0.0032	0.0211
247.5	-0.0088	0.0031	0.0031	0.0092	0.0031	0.0151	0.0151	0.0331	-0.0505	-0.0385	-0.0326	-0.0267	-0.0326	-0.0206	-0.0206	-0.0027
270.0	-0.0029	-0.0029	0.0031	0.0031	0.0092	0.0092	0.0151	0.0390	-0.0446	-0.0401	-0.0385	-0.0385	-0.0326	-0.0326	-0.0267	-0.0088
292.5	-0.0029	-0.0029	0.0031	0.0031	0.0031	0.0031	0.0151	0.0331	-0.0206	-0.0447	-0.0447	-0.0447	-0.0401	-0.0401	-0.0488	0.0332
315.0	-0.0031	-0.0029	0.0031	0.0031	0.0031	0.0031	0.0210		-0.0385	-0.0385	-0.0385	-0.0267	-0.0206	-0.0267	-0.0088	0.0331
337.5																
$\alpha = 12.0^\circ$																
0.0	0.0032	-0.0027	-0.0027	0.0032	0.0032	0.0032	0.0211	0.0331	-0.0684	-0.0783	-0.0743	-0.0625	-0.0564	-0.0625	-0.0446	-0.0446
22.5	-0.0027	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0211	0.0331	-0.0684	-0.0425	-0.0591	-0.0625	-0.0446	-0.0446	-0.0324	-0.0477
45.0	-0.0027	-0.0027	0.0091	0.0091	0.0032	0.0152	0.0211	0.0391	0.0211	0.0211	0.0331	0.0331	0.0271	0.0450	0.0808	
67.5	-0.0027	-0.0027	0.0091	0.0091	0.0032	0.0152	0.0211	0.0391	-0.0330	-0.0147	0.0271	0.0271	0.0331	0.0331	0.0391	0.0808
112.5	-0.0206	-0.0088	0.0032	0.0032	0.0091	0.0091	0.0152	0.0450	-0.0984	-0.0446	-0.0027	-0.0206	0.0332	-0.0147	0.0211	0.0690
135.0	-0.0032	-0.0027	0.0091	-0.0027	0.0091	0.0032	0.0271	0.0570	-0.0206	-0.0088	-0.0088	-0.0088	-0.0046	-0.0046	-0.0267	0.0627
157.5	-0.0064	0.0152	0.0152	0.0152	0.0152	0.0032	0.0271	0.0571	-0.0206	-0.0046	-0.0046	-0.0046	-0.0088	-0.0088	-0.0267	0.0627
180.0	-0.0027	-0.0027	0.0152	0.0152	0.0152	0.0032	0.0271	0.0571	-0.0206	-0.0046	-0.0046	-0.0046	-0.0088	-0.0088	-0.0267	0.0627
202.5	-0.0385	-0.0032	0.0091	0.0091	0.0091	0.0032	0.0152	0.0331	-0.0385	-0.0147	-0.0088	-0.0206	-0.0326	-0.0385	-0.0206	-0.0027
225.0	-0.0267	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0152	0.0511	-0.0326	-0.0147	-0.0088	-0.0207	-0.0027	-0.0027	0.0032	0.0211
247.5	-0.0088	0.0031	0.0031	0.0092	0.0031	0.0151	0.0151	0.0331	-0.0505	-0.0385	-0.0326	-0.0267	-0.0267	-0.0206	-0.0206	-0.0027
270.0	-0.0029	-0.0029	0.0031	0.0031	0.0031	0.0031	0.0151	0.0331	-0.0206	-0.0447	-0.0447	-0.0447	-0.0401	-0.0401	-0.0488	0.0332
292.5	-0.0029	-0.0029	0.0031	0.0031	0.0031	0.0031	0.0210		-0.0385	-0.0385	-0.0385	-0.0267	-0.0206	-0.0267	-0.0088	0.0331
315.0	-0.0031	-0.0029	0.0031	0.0031	0.0031	0.0031	0.0210									
337.5																
$\alpha = 15.0^\circ$																
0.0	-0.0087	-0.0087	-0.0087	-0.0028	-0.0028	-0.0028	0.0150	0.0269	-0.1044	-0.1103	-0.1103	-0.0924	-0.0865	-0.0924	-0.0686	-0.0745
22.5	-0.0087	-0.0087	-0.0087	-0.0028	-0.0028	-0.0028	0.0150	0.0269	-0.1010	-0.0924	-0.0686	-0.0924	-0.0865	-0.0745	-0.0566	-0.0566
45.0	-0.0087	-0.0087	-0.0087	-0.0028	-0.0028	-0.0028	0.0150	0.0269	-0.0989	-0.0920	-0.0620	-0.0920	-0.0865	-0.0745	-0.0566	-0.0566
67.5	-0.0087	-0.0087	-0.0087	-0.0028	-0.0028	-0.0028	0.0150	0.0269	-0.0989	-0.0920	-0.0620	-0.0920	-0.0865	-0.0745	-0.0566	-0.0566
112.5	-0.0206	-0.0088	-0.0088	-0.0028	-0.0028	-0.0028	0.0150	0.0269	-0.0989	-0.0920	-0.0620	-0.0920	-0.0865	-0.0745	-0.0566	-0.0566
135.0	-0.0435	-0.0087	-0.0087	-0.0028	-0.0028	-0.0028	0.0150	0.0269	-0.0989	-0.0920	-0.0620	-0.0920	-0.0865	-0.0745	-0.0566	-0.0566
157.5	-0.0682	-0.0030	-0.0091	-0.0091	-0.0091	-0.0091	0.0150	0.0269	-0.0989	-0.0920	-0.0620	-0.0920	-0.0865	-0.0745	-0.0566	-0.0566
180.0	-0.0027	-0.0027	0.0091	-0.0091	-0.0091	-0.0091	0.0150	0.0269	-0.0989	-0.0920	-0.0620	-0.0920	-0.0865	-0.0745	-0.0566	-0.0566
202.5	-0.0385	-0.0028	0.0030	-0.0030	-0.0030	-0.0030	0.0150	0.0269	-0.0989	-0.0920	-0.0620	-0.0920	-0.0865	-0.0745	-0.0566	-0.0566
225.0	-0.0265	-0.0087	-0.0087	0.0030	0.0030	0.0030	0.0150	0.0269	-0.0987	-0.0919	-0.0609	-0.0909	-0.0629	-0.0909	-0.0569	-0.0569
247.5	-0.0147	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0150	0.0269	-0.0987	-0.0919	-0.0609	-0.0909	-0.0629	-0.0909	-0.0569	-0.0569
270.0	-0.0147	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0150	0.0269	-0.0987	-0.0919	-0.0609	-0.0909	-0.0629	-0.0909	-0.0569	-0.0569
292.5	-0.0088	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0150	0.0269	-0.0987	-0.0919	-0.0609	-0.0909	-0.0629	-0.0909	-0.0569	-0.0569
315.0	-0.0088	-0.0027	0.0032	0.0032	0.0032	0.0032	0.0150	0.0269	-0.0987	-0.0919	-0.0609	-0.0909	-0.0629	-0.0909	-0.0569	-0.0569
337.5	-0.0088	-0.0088	-0.0088	-0.0027	-0.0032	-0.0032	0.0150	0.0269	-0.0987	-0.0919	-0.0609	-0.0909	-0.0629	-0.0909	-0.0569	-0.0569
$\alpha = 14.0^\circ$																

TABLE V. - Continued.

(e) $\beta = 90^\circ$; $M = 1.00$.

θ , deg	$(p - p_\infty)/p_\infty$ for longitudinal station								$(p - p_\infty)/p_\infty$ for longitudinal station							
	$\alpha = -2.0^\circ$								$\alpha = 4.0^\circ$							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
0.0	0.0550	0.0484	0.0421	0.0421	0.0421	0.0367	0.0550	0.0677	0.0622	0.0492	0.0427	0.0492	0.0427	0.0361	0.0556	0.0586
22.5	0.0550	0.0484	0.0484	0.0421	0.0421	0.0421	0.0484	0.0743	0.0556	0.0556	0.0492	0.0492	0.0492	0.0492	0.0750	0.0556
45.0	0.0550	0.0484	0.0421	0.0421	0.0421	0.0484	0.0484	0.0936	0.0622	0.0622	0.0556	0.0492	0.0492	0.0492	0.1269	
67.5	0.0550	0.0484	0.0484	0.0421	0.0421	0.0484	0.0484	0.0936	0.0759	0.0686	0.0816	0.0696	0.0596	0.0686	0.1010	
112.5	0.0357	0.0421	0.0484	0.0421	0.0421	0.0357	0.0550	0.0743	0.0577	0.0622	0.0556	0.0556	0.0622	0.1010		
135.0	0.0164	0.0484	0.0550	0.0421	0.0484	0.0357	0.0614	0.0936	-0.0155	0.0356	0.0486	0.0492	0.0622	0.0497	0.0750	0.0559
157.5	0.0035	0.0743	0.0677	0.0614	0.0484	0.0421	0.0614	0.0677	-0.0221	0.0622	0.0686	0.0622	0.0492	0.0361	0.0686	0.0750
180.0	0.0035	0.0743	0.0550	0.0484	0.0421	0.0357	0.0550	0.0614	-0.0116	0.0750	0.0562	0.0556	0.0361	0.0686	0.0622	
202.5	-0.0179	0.0484	0.0550	0.0484	0.0421	0.0357	0.0550	0.0743	0.0233	0.0686	0.0622	0.0556	0.0492	0.0427	0.0556	0.0750
22.5	0.0228	0.0484	0.0484	0.0421	0.0421	0.0484	0.0484	0.0900	0.0241	0.0632	0.0622	0.0556	0.0492	0.0427	0.0556	0.0750
25.0	0.0484	0.0480	0.0616	0.0616	0.0486	0.0552	0.0486	0.0808	0.0486	0.0552	0.0552	0.0486	0.0486	0.0486	0.0552	0.0880
292.5	0.0616	0.0552	0.0616	0.0552	0.0552	0.0486	0.0552	0.0873	0.016	0.0552	0.0486	0.0486	0.0486	0.0486	0.0552	0.0880
315.0	0.0552	0.0616	0.0552	0.0552	0.0552	0.0422	0.0616	0.1259	0.0552	0.0486	0.0422	0.0422	0.0486	0.0422	0.0552	0.1001
337.5	0.0680	0.0552	0.0552	0.0552	0.0486	0.0616	0.0616	0.0552	0.0552	0.0486	0.0422	0.0422	0.0486	0.0358	0.0552	
$\alpha = 0^\circ$																
0.0	0.0614	0.0484	0.0421	0.0484	0.0421	0.0421	0.0550	0.0677	0.0228	0.0098	0.0335	0.0164	0.0098	0.0035	0.0228	0.0357
22.5	0.0550	0.0484	0.0484	0.0421	0.0421	0.0484	0.0550	0.0807	0.0228	0.0228	0.0228	0.0164	0.0291	0.0550		
45.0	0.0614	0.0550	0.0484	0.0484	0.0421	0.0550	0.0550	0.1063	0.0484	0.0484	0.0484	0.0421	0.0357	0.0357	0.0421	0.1163
67.5	0.0550	0.0614	0.0550	0.0421	0.0550	0.0550	0.0807	0.0743	0.0677	0.0807	0.0677	0.0550	0.0677	0.0677	0.1163	
112.5	0.0164	0.0484	0.0550	0.0421	0.0484	0.0357	0.0550	0.0743	0.0357	0.0421	0.0743	0.0850	0.0677	0.0550	0.0677	0.1163
135.0	0.0035	0.0677	0.0614	0.0484	0.0484	0.0357	0.0614	0.0743	-0.0159	0.0357	0.0614	0.0357	0.0550	0.0291	0.0677	0.1193
157.5	0.0035	0.0677	0.0614	0.0484	0.0484	0.0357	0.0614	0.0743	-0.0159	0.0291	0.0614	0.0357	0.0550	0.0291	0.0677	
180.0	0.0098	0.0614	0.0550	0.0484	0.0484	0.0357	0.0614	0.0614	-0.0094	0.0421	0.0357	0.0614	0.0357	0.0421	0.0421	0.0884
202.5	0.0098	0.0550	0.0550	0.0484	0.0421	0.0357	0.0484	0.0743	0.0035	0.0421	0.0357	0.0291	0.0164	0.0357	0.0350	
22.5	0.0484	0.0421	0.0484	0.0421	0.0421	0.0484	0.0484	0.0936	0.0228	0.0421	0.0421	0.0421	0.0421	0.0421	0.0421	0.071
25.0	0.0486	0.0616	0.0552	0.0552	0.0486	0.0552	0.0486	0.0744	0.0228	0.0421	0.0421	0.0421	0.0357	0.0421	0.0421	0.0677
27.5	0.0616	0.0486	0.0552	0.0486	0.0486	0.0552	0.0486	0.0808	0.0229	0.0417	0.0417	0.0417	0.0290	0.0354	0.0290	0.0417
315.0	0.0486	0.0552	0.0486	0.0552	0.0486	0.0552	0.0422	0.0616	0.1131	0.0229	0.0354	0.0354	0.0290	0.0354	0.0290	0.0483
337.5	0.0616	0.0486	0.0486	0.0486	0.0486	0.0552	0.0422	0.0616	0.0229	0.0227	0.0162	0.0227	0.0290	0.0162	0.0354	
$\alpha = 2.0^\circ$																
0.0	0.0479	0.0351	0.0288	0.0351	0.0288	0.0288	0.0479	0.0606	-0.0095	-0.0222	-0.0288	-0.0158	-0.0351	-0.0029	-0.0029	
22.5	0.0414	0.0351	0.0351	0.0288	0.0351	0.0288	0.0479	0.0734	-0.0095	-0.0229	-0.0298	-0.0232	-0.0095	-0.0029	-0.0228	
45.0	0.0479	0.0414	0.0351	0.0351	0.0351	0.0414	0.0414	0.1056	0.0421	0.0421	0.0421	0.0291	0.0291	0.0291	0.1522	
67.5	0.0550	0.0479	0.0542	0.0479	0.0351	0.0479	0.0351	0.0797	0.0807	0.0807	0.0936	0.0870	0.0743	0.0936	0.1256	
112.5	0.0137	0.0421	0.0484	0.0421	0.0484	0.0421	0.0484	0.0797	0.0807	0.0807	0.0870	0.0870	0.0743	0.0807	0.1193	
135.0	-0.0161	0.0414	0.0479	0.0288	0.0414	0.0288	0.0566	0.0797	-0.0217	-0.0284	-0.0444	-0.0444	-0.0265	-0.0385	-0.0450	
157.5	0.0161	0.0479	0.0479	0.0479	0.0351	0.0288	0.0542	0.0671	-0.0217	-0.0284	-0.0444	-0.0444	-0.0265	-0.0385	-0.0450	
180.0	-0.0161	0.0408	0.0479	0.0479	0.0479	0.0414	0.0288	0.0542	0.0542	-0.0187	-0.0264	-0.0364	-0.0364	-0.0263	-0.0364	
202.5	-0.0035	0.0479	0.0414	0.0351	0.0351	0.0288	0.0414	0.0671	0.0686	-0.0226	-0.0206	-0.0385	-0.0446	-0.0364	-0.0385	-0.0206
22.5	0.0354	0.0483	0.0417	0.0354	0.0417	0.0354	0.0417	0.0797	-0.0037	0.0131	0.0229	0.0357	0.0165	0.0165	0.0358	
25.0	0.0483	0.0417	0.0417	0.0354	0.0417	0.0417	0.0483	0.0673	0.0037	0.0229	0.0229	0.0229	0.0229	0.0229	0.0229	0.0229
27.5	0.0483	0.0417	0.0417	0.0417	0.0417	0.0483	0.0354	0.0566	0.1056	0.0229	0.0229	0.0165	0.0165	0.0165	0.0229	
315.0	0.0483	0.0417	0.0417	0.0417	0.0417	0.0483	0.0354	0.0566	0.1056	0.0229	0.0229	0.0165	0.0165	0.0165	0.0229	
337.5	0.0483	0.0417	0.0354	0.0417	0.0417	0.0483	0.0354	0.0566	0.1056	0.0229	0.0229	0.0165	0.0165	0.0165	0.0229	

TABLE VI.- BODY STATIC-PRESSURE ERROR COEFFICIENTS $(p - p_\infty)/p_\infty$ WITH BLEED AIR.(a) $\delta = 90^\circ$; $M = 0.70$.

θ , deg	$(p - p_\infty)/p_\infty$ for longitudinal station								$(p - p_\infty)/p_\infty$ for longitudinal station							
	$\alpha=0^\circ$; $w=0.018$								$\alpha=0^\circ$; $w=0.018$							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha=0^\circ$; $w=0.018$																
0.0	-0.0061	-0.0061	-0.0061	-0.0015	-0.0015	-0.0015	0.0032	0.0078	-0.0245	-0.0245	-0.0245	-0.0245	-0.0199	-0.0245	-0.0199	-0.0153
22.5	-0.0061	-0.0061	0.0032	-0.0061	-0.0015	-0.0015	0.0032	0.0078	-0.0245	-0.0199	-0.0153	-0.0199	-0.0153	-0.0153	-0.0153	-0.0153
45.0	-0.0061	-0.0061	-0.0061	-0.0015	-0.0015	-0.0015	0.0032	0.0215	-0.0107	-0.0107	-0.0107	-0.0061	-0.0061	-0.0061	-0.0061	0.0261
67.5	-0.0061	-0.0041	-0.0015	-0.0015	-0.0015	-0.0015	0.0032	0.0078	-0.0102	-0.0102	-0.0102	-0.0062	-0.0062	-0.0062	-0.0062	0.0215
90.0	-0.0061	-0.0107	-0.0061	-0.0014	-0.0015	-0.0015	0.0032	0.0124	-0.0105	-0.0064	-0.0015	0.0032	0.0078	0.0078	0.0078	0.0078
112.5	-0.0107	-0.0061	-0.0015	-0.0061	-0.0015	-0.0061	0.0078	0.0215	-0.0199	-0.0153	-0.0061	-0.0107	-0.0017	-0.0078	-0.0215	-0.0153
135.0	-0.0061	-0.0015	-0.0015	-0.0061	-0.0015	-0.0061	0.0032	0.0078	-0.0475	-0.0245	-0.0199	-0.0153	-0.0107	-0.0078	-0.0107	-0.0153
157.5	-0.0153	-0.0061	-0.0015	-0.0015	-0.0015	-0.0015	0.0032	0.0078	-0.0429	-0.0199	-0.0199	-0.0290	-0.0153	-0.0199	-0.0199	-0.0199
180.0	-0.0153	-0.0061	-0.0061	-0.0015	-0.0015	-0.0015	0.0078	0.0290	-0.0290	-0.0199	-0.0153	-0.0199	-0.0199	-0.0199	-0.0199	-0.0199
202.5	-0.0153	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	0.0078	0.0290	-0.0290	-0.0199	-0.0153	-0.0199	-0.0199	-0.0199	-0.0199	-0.0199
225.0	-0.0061	-0.0015	-0.0015	0.0031	-0.0015	0.0031	0.0031	0.0078	-0.0109	-0.0153	-0.0107	-0.0107	-0.0107	-0.0107	-0.0107	-0.0061
247.5	-0.0015	-0.0061	-0.0015	-0.0015	0.0031	0.0031	0.0031	0.0078	-0.0107	-0.0107	-0.0107	-0.0107	-0.0107	-0.0107	-0.0107	-0.0061
292.5	-0.0061	-0.0015	-0.0015	-0.0061	0.0031	0.0031	0.0031	0.0078	-0.0107	-0.0107	-0.0107	-0.0061	-0.0107	-0.0061	-0.0061	-0.0061
315.0	-0.0061	-0.0015	-0.0015	-0.0061	0.0031	0.0031	0.0031	0.0078	-0.0107	-0.0107	-0.0107	-0.0061	-0.0107	-0.0061	-0.0061	0.0076
337.5	-0.0015	-0.0015	-0.0015	0.0031	0.0031	0.0031	0.0078	-0.0198	-0.0198	-0.0198	-0.0153	-0.0198	-0.0198	-0.0198	-0.0198	-0.0198
$\alpha=2.0^\circ$; $w=0.018$																
0.0	-0.0061	-0.0061	-0.0061	-0.0015	-0.0061	-0.0015	0.0031	0.0031	-0.0475	-0.0475	-0.0475	-0.0429	-0.0429	-0.0429	-0.0429	-0.0382
22.5	-0.0061	-0.0061	0.0031	-0.0061	-0.0015	-0.0015	0.0031	0.0076	-0.0382	-0.0382	-0.0290	-0.0382	-0.0382	-0.0290	-0.0336	-0.0336
45.0	-0.0061	-0.0015	-0.0061	-0.0015	-0.0015	-0.0015	0.0031	0.0260	-0.0107	-0.0153	-0.0107	-0.0107	-0.0107	-0.0107	-0.0215	-0.0215
67.5	-0.0107	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	0.0031	0.0076	-0.0124	-0.0078	-0.0124	-0.0124	-0.0124	-0.0124	-0.0170	-0.0307
90.0	-0.0061	-0.0015	-0.0061	-0.0015	-0.0061	-0.0061	0.0031	0.0076	-0.0178	-0.0178	-0.0178	-0.0178	-0.0178	-0.0178	-0.0178	-0.0307
112.5	-0.0153	-0.0107	-0.0061	-0.0107	-0.0015	-0.0061	0.0076	0.0214	-0.0356	-0.0199	-0.0107	-0.0153	-0.0107	-0.0153	-0.0153	-0.0316
135.0	-0.0153	-0.0061	-0.0061	-0.0015	-0.0061	-0.0015	0.0031	0.0031	-0.0639	-0.0475	-0.0382	-0.0336	-0.0336	-0.0290	-0.0336	-0.0336
157.5	-0.0153	-0.0061	-0.0015	-0.0015	-0.0061	-0.0061	0.0031	0.0031	-0.0750	-0.0429	-0.0429	-0.0429	-0.0429	-0.0429	-0.0429	-0.0429
180.0	-0.0199	-0.0107	-0.0061	-0.0061	-0.0061	-0.0015	0.0031	0.0031	-0.0336	-0.0245	-0.0245	-0.0245	-0.0245	-0.0245	-0.0245	-0.0199
202.5	-0.0061	-0.0015	-0.0061	-0.0061	-0.0061	-0.0061	0.0031	0.0031	-0.0245	-0.0245	-0.0245	-0.0107	-0.0107	-0.0107	-0.0107	-0.0105
225.0	-0.0107	-0.0061	-0.0061	-0.0015	-0.0061	-0.0061	0.0031	0.0031	-0.0245	-0.0245	-0.0245	-0.0107	-0.0107	-0.0107	-0.0107	-0.0105
247.5	-0.0061	-0.0107	-0.0061	-0.0061	-0.0061	-0.0061	0.0031	0.0031	-0.0291	-0.0291	-0.0291	-0.0291	-0.0291	-0.0291	-0.0291	-0.0199
292.5	-0.0107	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	0.0031	0.0214	-0.0291	-0.0153	-0.0153	-0.0107	-0.0153	-0.0107	-0.0107	0.0031
315.0	-0.0061	-0.0107	-0.0061	-0.0061	-0.0061	-0.0061	0.0031	0.0031	-0.0291	-0.0291	-0.0291	-0.0291	-0.0291	-0.0291	-0.0291	-0.0199
337.5	-0.0107	-0.0107	-0.0107	-0.0061	-0.0015	-0.0061	0.0031	0.0031	-0.0291	-0.0291	-0.0291	-0.0245	-0.0245	-0.0245	-0.0245	-0.0199
$\alpha=12.0^\circ$; $w=0.02d$																
0.0	-0.0061	-0.0061	-0.0061	-0.0015	-0.0061	-0.0015	0.0032	0.0078	-0.0475	-0.0475	-0.0475	-0.0475	-0.0475	-0.0475	-0.0475	-0.0382
22.5	-0.0061	-0.0061	0.0032	-0.0061	-0.0015	-0.0015	0.0032	0.0076	-0.0382	-0.0382	-0.0290	-0.0382	-0.0382	-0.0290	-0.0336	-0.0336
45.0	-0.0061	-0.0015	-0.0061	-0.0015	-0.0061	-0.0061	0.0032	0.0076	-0.0124	-0.0078	-0.0124	-0.0124	-0.0124	-0.0124	-0.0170	-0.0307
67.5	-0.0107	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	0.0032	0.0076	-0.0356	-0.0199	-0.0107	-0.0153	-0.0107	-0.0153	-0.0153	-0.0316
90.0	-0.0153	-0.0107	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0750	-0.0429	-0.0429	-0.0429	-0.0429	-0.0429	-0.0429	-0.0429
112.5	-0.0061	-0.0061	-0.0061	-0.0015	-0.0061	-0.0061	0.0032	0.0076	-0.0336	-0.0245	-0.0245	-0.0245	-0.0245	-0.0245	-0.0245	-0.0199
135.0	-0.0015	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	0.0032	0.0076	-0.0336	-0.0245	-0.0245	-0.0245	-0.0245	-0.0245	-0.0245	-0.0199
157.5	-0.0199	-0.0107	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0931	-0.0656	-0.0656	-0.0656	-0.0656	-0.0656	-0.0656	-0.0610
180.0	-0.0199	-0.0107	-0.0107	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0473	-0.0289	-0.0335	-0.0426	-0.0426	-0.0426	-0.0426	-0.0335
202.5	-0.0153	-0.0107	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0289	-0.0243	-0.0198	-0.0198	-0.0198	-0.0198	-0.0198	-0.0107
225.0	-0.0061	-0.0107	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0289	-0.0243	-0.0198	-0.0198	-0.0198	-0.0198	-0.0198	-0.0107
247.5	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0565	-0.0473	-0.0382	-0.0244	-0.0244	-0.0244	-0.0244	-0.0153
292.5	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0519	-0.0473	-0.0382	-0.0244	-0.0244	-0.0244	-0.0244	-0.0240
315.0	-0.0107	-0.0107	-0.0107	-0.0061	-0.0015	-0.0061	0.0032	0.0076	-0.0244	-0.0198	-0.0198	-0.0198	-0.0198	-0.0198	-0.0198	-0.0240
337.5	-0.0107	-0.0107	-0.0107	-0.0061	-0.0015	-0.0061	0.0032	0.0076	-0.0382	-0.0336	-0.0336	-0.0336	-0.0336	-0.0336	-0.0336	-0.0290
$\alpha=15.0^\circ$; $w=0.018$																
0.0	-0.0061	-0.0107	-0.0061	-0.0061	-0.0015	-0.0015	0.0032	0.0078	-0.0656	-0.0701	-0.0701	-0.0656	-0.0656	-0.0656	-0.0656	-0.0610
22.5	-0.0061	-0.0061	-0.0061	-0.0015	-0.0015	-0.0015	0.0032	0.0076	-0.0610	-0.0519	-0.0610	-0.0519	-0.0519	-0.0519	-0.0519	-0.0610
45.0	-0.0061	-0.0015	-0.0061	-0.0015	-0.0015	-0.0015	0.0032	0.0076	-0.0243	-0.0243	-0.0243	-0.0243	-0.0243	-0.0243	-0.0243	-0.0243
67.5	-0.0015	-0.0032	-0.0015	-0.0015	0.0078	0.0170	0.0123	0.0077	0.0123	0.0123	0.0077	0.0169	0.0169	0.0169	0.0169	0.0306
90.0	-0.0061	-0.0061	-0.0061	-0.0015	-0.0015	-0.0015	0.0032	0.0076	-0.0077	0.0077	0.0123	0.0123	0.0123	0.0123	0.0351	-0.0351
112.5	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0335	-0.0288	-0.0288	-0.0198	-0.0198	-0.0198	-0.0198	-0.0307
135.0	-0.0061	-0.0061	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0335	-0.0288	-0.0288	-0.0198	-0.0198	-0.0198	-0.0198	-0.0307
157.5	-0.0199	-0.0107	-0.0061	-0.0061	-0.0061	-0.0015	0.0032	0.0076	-0.0931	-0.0656	-0.0656	-0.0656	-0.0656	-0.0656	-0.0656	-0.0701
180.0	-0.0199	-0.0107	-0.0107	-0.0061	-0.0015	-0.0061	0.0032	0.0076</td								

TABLE VI.- Continued.

$$(b) \quad g = 90^\circ; \quad M = 0.80$$

θ, deg	(p - p _{atm}) / p _{atm} for longitudinal station								(p - p _{atm}) / p _{atm} for longitudinal station								
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
	$\alpha=0^\circ; w=0.013$																
0.0	-0.0068	-0.0068	-0.0068	-0.0018	-0.0018	-0.0018	0.0033	0.0083	-0.0319	-0.0319	-0.0269	-0.0269	-0.0219	-0.0219	-0.0169	-0.0169	
22.5	-0.0068	-0.0068	-0.0033	-0.0068	-0.0018	-0.0018	0.0033	0.0083	-0.0319	-0.0319	-0.0269	-0.0269	-0.0219	-0.0219	-0.0169	-0.0169	
45.0	-0.0068	-0.0068	-0.0068	-0.0018	-0.0018	-0.0018	0.0033	0.0133	-0.0119	-0.0119	-0.0119	-0.0119	-0.0068	-0.0068	-0.0048	-0.0048	
67.5	-0.0068	-0.0068	-0.0018	-0.0068	-0.0018	-0.0018	0.0033	0.0133	0.0032	-0.0018	-0.0018	0.0032	0.0082	0.0032	0.0132	0.0283	0.0283
112.5	-0.0118	-0.0118	-0.0068	-0.0068	-0.0018	-0.0018	0.0033	0.0133	-0.0018	-0.0018	0.0032	0.0082	0.0032	0.0132	0.0283	0.0283	
135.0	-0.0118	-0.0068	-0.0068	-0.0018	-0.0018	-0.0018	0.0033	0.0083	-0.0119	-0.0119	-0.0119	-0.0119	-0.0169	-0.0169	-0.0219	-0.0219	
157.5	-0.0118	-0.0118	-0.0018	-0.0018	-0.0018	-0.0018	0.0033	0.0083	-0.0119	-0.0119	-0.0119	-0.0119	-0.0169	-0.0169	-0.0219	-0.0219	
202.5	-0.0268	-0.0068	-0.0018	-0.0018	-0.0018	-0.0018	0.0083	0.0033	-0.0720	-0.0219	-0.0219	-0.0219	-0.0269	-0.0269	-0.0319	-0.0319	
225.0	-0.0168	-0.0068	-0.0068	-0.0068	-0.0018	-0.0018	0.0033	0.0133	-0.0219	-0.0219	-0.0219	-0.0219	-0.0269	-0.0269	-0.0319	-0.0319	
292.5	-0.0118	-0.0068	-0.0068	-0.0018	-0.0018	-0.0018	0.0033	0.0083	-0.0168	-0.0168	-0.0168	-0.0168	-0.0219	-0.0219	-0.0269	-0.0269	
315.0	-0.0118	-0.0118	-0.0068	-0.0068	-0.0018	-0.0018	0.0033	0.0083	-0.0168	-0.0168	-0.0168	-0.0168	-0.0219	-0.0219	-0.0269	-0.0269	
337.5	-0.0068	-0.0118	-0.0068	-0.0068	-0.0018	-0.0018	0.0033	0.0083	-0.0268	-0.0268	-0.0268	-0.0268	-0.0218	-0.0218	-0.0269	-0.0269	
	$\alpha=2.0^\circ; w=0.013$																
0.0	-0.0018	-0.0069	-0.0069	-0.0018	-0.0018	-0.0018	0.0032	0.0084	-0.0572	-0.0523	-0.0523	-0.0523	-0.0572	-0.0572	-0.0572	-0.0572	
22.5	-0.0049	-0.0069	-0.0094	-0.0018	-0.0018	-0.0018	0.0032	0.0084	-0.0572	-0.0523	-0.0523	-0.0523	-0.0572	-0.0572	-0.0572	-0.0572	
45.0	-0.0018	-0.0018	-0.0018	-0.0018	-0.0032	-0.0032	0.0032	0.0085	-0.0219	-0.0219	-0.0169	-0.0169	-0.0119	-0.0119	-0.0169	-0.0169	
67.5	-0.0069	-0.0069	-0.0018	-0.0018	-0.0032	-0.0032	0.0084	0.0185	0.0134	-0.0089	-0.0184	-0.0134	0.0084	0.0184	0.0385	0.0385	
112.5	-0.0069	-0.0069	-0.0018	-0.0018	-0.0032	-0.0032	0.0084	0.0185	0.0032	-0.0018	-0.0018	0.0032	0.0084	0.0032	0.0234	0.0234	
135.0	-0.0169	-0.0069	-0.0018	-0.0069	-0.0032	-0.0032	0.0084	0.0185	-0.0370	-0.0320	-0.0169	-0.0219	-0.0119	-0.0219	-0.0370	-0.0370	
157.5	-0.0269	-0.0018	-0.0032	-0.0032	-0.0032	-0.0032	0.0084	0.0185	-0.0976	-0.0475	-0.0422	-0.0422	-0.0522	-0.0522	-0.0570	-0.0570	
180.0	-0.0219	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0032	0.0134	-0.0349	-0.0269	-0.0269	-0.0269	-0.0370	-0.0370	-0.0219	-0.0219	
202.5	-0.0119	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0032	0.0134	-0.0472	-0.0269	-0.0269	-0.0269	-0.0370	-0.0370	-0.0219	-0.0219	
225.0	-0.0119	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0032	0.0134	-0.0320	-0.0219	-0.0169	-0.0119	-0.0119	-0.0119	-0.0319	-0.0319	
292.5	-0.0069	-0.0069	-0.0018	-0.0018	-0.0018	-0.0018	0.0032	0.0084	-0.0422	-0.0370	-0.0370	-0.0370	-0.0320	-0.0320	-0.0219	-0.0219	
315.0	-0.0069	-0.0069	-0.0069	-0.0018	-0.0018	-0.0018	0.0032	0.0084	-0.0370	-0.0370	-0.0370	-0.0370	-0.0320	-0.0320	-0.0269	-0.0269	
337.5	-0.0069	-0.0069	-0.0069	-0.0018	-0.0018	-0.0018	0.0032	0.0084	-0.0370	-0.0370	-0.0370	-0.0370	-0.0320	-0.0320	-0.0269	-0.0269	
	$\alpha=4.0^\circ; w=0.013$																
	$\alpha=15.0^\circ; w=0.013$																
0.0	-0.0119	-0.0169	-0.0169	-0.0119	-0.0119	-0.0119	-0.0018	0.0032	-0.0825	-0.0825	-0.0825	-0.0825	-0.0773	-0.0773	-0.0723	-0.0723	
22.5	-0.0119	-0.0169	-0.0119	-0.0119	-0.0119	-0.0119	-0.0018	0.0032	-0.0723	-0.0723	-0.0723	-0.0723	-0.0723	-0.0723	-0.0573	-0.0573	
45.0	-0.0119	-0.0169	-0.0169	-0.0119	-0.0119	-0.0119	-0.0018	0.0032	-0.0269	-0.0269	-0.0269	-0.0269	-0.0219	-0.0219	-0.0285	-0.0285	
67.5	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0018	0.0032	0.0134	-0.0084	-0.0184	-0.0184	0.0234	0.0234	0.0285	0.0285	
112.5	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0018	0.0032	0.0134	-0.0084	-0.0184	-0.0184	0.0234	0.0234	0.0357	0.0357	
135.0	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0119	-0.0018	0.0032	-0.0422	-0.0370	-0.0219	-0.0169	-0.0169	-0.0269	-0.0269	-0.0184	
157.5	-0.0370	-0.0119	-0.0119	-0.0069	-0.0119	-0.0119	-0.0018	0.0032	-0.1227	-0.0875	-0.0723	-0.0673	-0.0773	-0.0773	-0.0573	-0.0573	
180.0	-0.0422	-0.0069	-0.0069	-0.0069	-0.0119	-0.0119	-0.0018	0.0032	-0.1430	-0.0773	-0.0773	-0.0773	-0.0875	-0.0875	-0.0825	-0.0825	
202.5	-0.0119	-0.0119	-0.0119	-0.0069	-0.0119	-0.0119	-0.0018	0.0032	-0.0269	-0.0370	-0.0370	-0.0370	-0.0520	-0.0520	-0.0520	-0.0520	
225.0	-0.0119	-0.0119	-0.0119	-0.0069	-0.0119	-0.0119	-0.0018	0.0032	-0.0370	-0.0269	-0.0269	-0.0269	-0.0419	-0.0419	-0.0419	-0.0419	
292.5	-0.0119	-0.0069	-0.0069	-0.0069	-0.0119	-0.0119	-0.0018	0.0032	-0.0670	-0.0620	-0.0570	-0.0520	-0.0419	-0.0419	-0.0419	-0.0419	
315.0	-0.0119	-0.0069	-0.0069	-0.0069	-0.0119	-0.0119	-0.0018	0.0032	-0.0319	-0.0269	-0.0269	-0.0269	-0.0219	-0.0219	-0.0219	-0.0219	
337.5	-0.0119	-0.0119	-0.0069	-0.0069	-0.0119	-0.0119	-0.0018	0.0032	-0.0419	-0.0419	-0.0369	-0.0319	-0.0369	-0.0319	-0.0319	-0.0319	

TABLE VI.- Continued

(c) $\theta = 80^\circ$; $M = 0.80$

θ, deg	(p - p _m) / p _m for longitudinal station								(p - p _m) / p _m for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$α=0^\circ; w=0.013$																
0.0	-0.0052	-0.0108	-0.0108	0.0003	0.0003	0.0003	0.0115	0.0170	-0.0332	-0.0388	-0.0388	-0.0275	-0.0275	-0.0332	-0.0164	-0.0164
22.5	-0.0052	-0.0052	-0.0115	-0.0008	0.0003	0.0003	0.0059	0.0228	-0.0275	-0.0108	-0.0108	-0.0275	-0.0275	-0.0164	-0.0108	-0.0108
45.0	-0.0052	-0.0052	0.0003	0.0003	-0.0052	0.0059	0.0228	-0.0275	-0.0108	-0.0115	-0.0275	-0.0275	-0.0164	-0.0164	-0.0164	-0.0164
67.5	-0.0164	-0.0164	-0.0052	-0.0052	0.0003	-0.0052	0.0059	0.0288	-0.0052	-0.0108	0.0059	0.0059	0.0170	0.0170	0.0451	0.0451
112.5	-0.0275	-0.0108	0.0003	-0.0052	0.0003	-0.0052	0.0170	0.0451	-0.0444	-0.0275	-0.0052	-0.0164	0.0003	-0.0164	0.0170	0.0506
135.0	-0.0388	-0.0003	0.0003	-0.0052	0.0003	-0.0052	0.0115	0.0170	-0.0947	-0.0388	-0.0219	0.0164	-0.0219	-0.032	0.0052	-0.0052
157.5	-0.0444	-0.0003	0.0003	0.0059	0.0003	-0.0052	0.0115	0.0170	-0.1150	-0.0444	-0.0219	0.0164	-0.0444	-0.0444	-0.0444	-0.0444
180.0	-0.0444	-0.0003	0.0003	0.0059	0.0003	-0.0052	0.0059	0.0228	-0.0500	-0.0219	-0.0164	-0.0164	-0.0319	-0.0319	-0.0108	-0.0108
225.0	-0.0388	-0.0108	0.0003	0.0003	0.0003	-0.0052	0.0059	0.0228	-0.0275	-0.0108	-0.0108	-0.0108	-0.0108	-0.0052	0.0003	0.0170
247.5	-0.0219	-0.0108	-0.0052	-0.0052	-0.0052	0.0003	0.0059	0.0339	-0.0275	-0.0108	-0.0108	-0.0108	-0.0108	-0.0052	0.0003	0.0002
315.0	-0.0107	-0.0051	0.0005	0.0061	0.0005	0.0061	0.0061	0.0229	-0.0164	-0.0110	-0.0110	-0.0054	-0.0110	-0.0054	-0.0054	-0.0054
337.5	-0.0051	-0.0051	0.0005	0.0005	0.0005	0.0005	0.0173	0.0508	-0.0278	-0.0278	-0.0278	-0.0222	-0.0110	-0.0222	-0.0054	-0.0054
$α=1.9^\circ; w=0.018$																
0.0	-0.0052	-0.0108	-0.0108	-0.0052	-0.0052	-0.0052	0.0059	0.0170	-0.0670	-0.0726	-0.0726	-0.0614	-0.0614	-0.0502	-0.0446	-0.0446
22.5	-0.0052	-0.0052	-0.0052	-0.0052	-0.0052	-0.0003	0.0059	0.0170	-0.0614	-0.0558	-0.0390	-0.0558	-0.0446	-0.0390	-0.0390	-0.0390
45.0	-0.0052	-0.0052	0.0059	0.0003	-0.0052	0.0115	0.0059	0.0200	-0.0275	-0.0185	-0.0185	-0.0275	-0.0275	-0.0164	-0.0164	-0.0164
67.5	-0.0164	-0.0164	-0.0052	-0.0052	0.0059	0.0003	0.0115	0.0339	-0.0171	-0.0171	-0.0171	-0.0171	-0.0171	-0.0052	-0.0052	-0.0052
112.5	-0.0332	-0.0164	0.0003	-0.0108	0.0059	-0.0052	0.0170	0.0451	-0.0595	-0.0003	0.0171	0.0171	-0.0221	-0.0221	-0.0341	-0.0621
135.0	-0.0444	-0.0052	0.0003	0.0003	0.0003	-0.0108	0.0115	0.0170	-0.1402	-0.0840	-0.0558	-0.0446	-0.0502	-0.0614	-0.0275	-0.0390
157.5	-0.0444	-0.0052	0.0003	0.0003	0.0003	-0.0052	0.0115	0.0170	-0.0792	-0.0434	-0.0558	-0.0502	-0.0558	-0.0726	-0.0446	-0.0558
180.0	-0.0388	-0.0108	-0.0052	-0.0052	-0.0052	0.0003	0.0059	0.0228	-0.0275	-0.0165	-0.0165	-0.0109	-0.0275	-0.0446	-0.0446	-0.0446
225.0	-0.0219	-0.0108	-0.0052	-0.0052	-0.0052	-0.0052	0.0003	0.0284	-0.0334	-0.0165	-0.0165	-0.0109	-0.0334	-0.0446	-0.0446	-0.0446
247.5	-0.0165	-0.0054	-0.0054	0.0002	-0.0054	0.0002	0.0002	0.0113	-0.0554	-0.0442	-0.0442	-0.0330	-0.0442	-0.0330	-0.0163	-0.0163
292.5	-0.0054	-0.0109	-0.0054	-0.0054	0.0002	0.0002	0.0057	0.0168	-0.0442	-0.0498	-0.0442	-0.0442	-0.0386	-0.0386	-0.0330	-0.0218
315.0	-0.0107	-0.0054	-0.0054	0.0002	0.0002	-0.0054	0.0113	0.0446	-0.0386	-0.0442	-0.0386	-0.0330	-0.0218	-0.0330	-0.0163	-0.0173
337.5	-0.0054	-0.0109	-0.0054	0.0002	0.0002	-0.0054	0.0113	0.0446	-0.0386	-0.0442	-0.0386	-0.0330	-0.0218	-0.0330	-0.0163	-0.0173
$α=12.0^\circ; w=0.018$																
0.0	-0.0052	-0.0108	-0.0108	-0.0052	-0.0052	-0.0052	0.0059	0.0170	-0.0670	-0.0726	-0.0726	-0.0614	-0.0614	-0.0502	-0.0446	-0.0446
22.5	-0.0052	-0.0052	-0.0052	-0.0052	-0.0052	-0.0003	0.0059	0.0170	-0.0614	-0.0558	-0.0390	-0.0558	-0.0446	-0.0390	-0.0390	-0.0390
45.0	-0.0052	-0.0052	0.0059	0.0003	-0.0052	0.0115	0.0059	0.0200	-0.0171	-0.0171	-0.0171	-0.0171	-0.0171	-0.0052	-0.0052	-0.0052
67.5	-0.0164	-0.0164	-0.0052	-0.0052	0.0059	0.0003	0.0115	0.0339	-0.0595	-0.0003	0.0171	0.0171	-0.0221	-0.0221	-0.0341	-0.0621
112.5	-0.0332	-0.0164	0.0003	-0.0108	0.0059	-0.0052	0.0170	0.0451	-0.1402	-0.0840	-0.0558	-0.0446	-0.0502	-0.0614	-0.0275	-0.0390
135.0	-0.0444	-0.0052	0.0003	0.0003	0.0003	-0.0108	0.0115	0.0170	-0.0792	-0.0434	-0.0558	-0.0502	-0.0558	-0.0726	-0.0446	-0.0558
157.5	-0.0444	-0.0052	0.0003	0.0003	0.0003	-0.0052	0.0115	0.0170	-0.0275	-0.0165	-0.0165	-0.0109	-0.0275	-0.0446	-0.0446	-0.0446
180.0	-0.0388	-0.0108	-0.0052	-0.0052	-0.0052	0.0003	0.0059	0.0228	-0.0275	-0.0165	-0.0165	-0.0109	-0.0275	-0.0446	-0.0446	-0.0446
225.0	-0.0219	-0.0108	-0.0052	-0.0052	-0.0052	-0.0052	0.0003	0.0284	-0.0334	-0.0165	-0.0165	-0.0109	-0.0334	-0.0446	-0.0446	-0.0446
247.5	-0.0165	-0.0054	-0.0054	0.0002	-0.0054	0.0002	0.0002	0.0113	-0.0554	-0.0442	-0.0442	-0.0330	-0.0442	-0.0330	-0.0163	-0.0163
292.5	-0.0054	-0.0109	-0.0054	-0.0054	0.0002	0.0002	0.0057	0.0168	-0.0442	-0.0498	-0.0442	-0.0442	-0.0386	-0.0386	-0.0330	-0.0218
315.0	-0.0107	-0.0054	-0.0054	0.0002	0.0002	-0.0054	0.0113	0.0446	-0.0386	-0.0442	-0.0386	-0.0330	-0.0218	-0.0330	-0.0163	-0.0173
337.5	-0.0051	-0.0107	-0.0051	0.0005	0.0005	-0.0051	0.0117	0.0446	-0.0389	-0.0389	-0.0389	-0.0334	-0.0278	-0.0334	-0.0222	-0.0222
$α=112.0^\circ; w=0.017$																
0.0	-0.0052	-0.0108	-0.0108	-0.0052	-0.0052	-0.0052	0.0059	0.0170	-0.0947	-0.1003	-0.1003	-0.0891	-0.0891	-0.0947	-0.0778	-0.0778
22.5	-0.0051	-0.0107	-0.0107	-0.0051	-0.0051	-0.0051	0.0061	0.0173	-0.0891	-0.0835	-0.0867	-0.0835	-0.0891	-0.0772	-0.0611	-0.0667
45.0	-0.0061	0.0005	0.0171	-0.0108	0.0005	0.0173	0.0061	0.0165	-0.0275	-0.0275	-0.0219	-0.0219	-0.0219	-0.0164	-0.0164	-0.0164
67.5	-0.0107	-0.0107	0.0005	0.0005	0.0061	0.0005	0.0117	0.0339	-0.1728	-0.1170	-0.0778	-0.0778	-0.0778	-0.0778	-0.0778	-0.0778
112.5	-0.0332	-0.0163	0.0005	-0.0107	0.0061	-0.0051	0.0229	0.0511	-0.0667	-0.0558	-0.0446	-0.0446	-0.0446	-0.0446	-0.0446	-0.0446
135.0	-0.0557	-0.0107	-0.0051	0.0005	0.0005	-0.0107	0.0117	0.0173	-0.0667	-0.0558	-0.0446	-0.0446	-0.0446	-0.0446	-0.0446	-0.0446
157.5	-0.0444	-0.0052	0.0005	0.0005	0.0005	-0.0107	0.0117	0.0163	-0.0275	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164
180.0	-0.0388	-0.0107	-0.0052	-0.0052	-0.0052	0.0005	0.0117	0.0163	-0.0275	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164
225.0	-0.0219	-0.0107	-0.0051	-0.0051	-0.0051	0.0005	0.0061	0.0287	-0.0444	-0.0219	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164	-0.0164
247.5	-0.0051	0.0005	0.0005	0.0005	0.0005	0.0005	0.0117	0.0173	-0.0780	-0.0613	-0.0557	-0.0557	-0.0557	-0.0445	-0.0389	-0.0389
315.0	-0.0051	0.0005	0.0005	0.0005	0.0005	0.0005	0.0117	0.0173	-0.0728	-0.0622	-0.0557	-0.0557	-0.0557	-0.0445	-0.0389	-0.0389
337.5	-0.0051	-0.0107	-0.0051	0.0005	0.0005	-0.0051	0.0117	0.0455	-0.0389	-0.0389	-0.0389	-0.0334	-0.0278	-0.0334	-0.0222	-0.0222

TABLE VI. - Continued.

(d) $\beta = 90^\circ$; $M = 0.95$.

θ , deg	$(p - p_w)/p_w$ for longitudinal station								$(p - p_w)/p_w$ for longitudinal station								
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
	$\alpha=0^\circ; w=0.018$								$\alpha=0^\circ; w=0.018$								
0.0	-0.0029	-0.0029	-0.0029	0.0030	0.0030	0.0030	0.0207	0.0326	-0.0324	-0.0384	-0.0384	-0.0265	-0.0245	-0.0324	-0.0086	-0.0027	
22.5	-0.0029	-0.0029	0.0148	-0.0029	0.0030	0.0089	0.0148	0.0326	-0.0324	-0.0365	-0.0365	-0.0255	-0.0204	-0.0086	-0.0027	0.0031	
45.0	-0.0029	-0.0029	-0.0029	0.0030	0.0030	0.0030	0.0148	0.0326	-0.0086	-0.0086	-0.0027	-0.0027	-0.0027	-0.0027	-0.0027	0.0083	
67.5	-0.0029	-0.0029	0.0089	0.0030	0.0030	0.0148	0.0365	0.0091	0.0091	0.0210	0.0151	0.0091	0.0210	0.0151	0.0269	0.0626	
112.5	-0.0205	-0.0087	0.0030	0.0030	0.0089	0.0030	0.0148	0.0444	-0.0204	-0.0086	0.0151	0.0091	0.0210	0.0151	0.0269	0.0626	
135.0	-0.0524	-0.0087	0.0030	-0.0029	0.0089	-0.0029	0.0267	0.0561	-0.0918	-0.0265	0.0032	-0.0145	0.0091	-0.0145	0.0330	0.0685	
157.5	-0.0524	-0.0087	0.0089	0.0030	0.0089	-0.0029	0.0267	0.0526	-0.1218	-0.0384	-0.0145	-0.0086	-0.0145	-0.0324	0.0091	0.0091	
180.0	-0.0677	-0.0089	0.0089	0.0089	0.0089	0.0030	0.0347	0.0507	-0.1412	-0.0452	-0.0145	-0.0086	-0.0145	-0.0324	-0.0091	-0.0091	
202.5	-0.0442	-0.0087	0.0030	0.0030	0.0030	-0.0029	0.0148	0.0326	-0.0502	-0.0145	-0.0086	-0.0086	-0.0145	-0.027	0.0151	-0.0151	
225.0	-0.0264	-0.0029	-0.0029	0.0030	0.0030	0.0030	0.0148	0.0302	-0.0265	-0.0086	-0.0027	-0.0027	-0.0027	0.0032	0.0091	0.0330	
247.5	-0.0144	-0.0027	0.0032	0.0091	0.0032	0.0091	0.0091	0.0328	-0.0147	-0.0029	0.0031	0.0090	-0.0029	0.0031	0.0031	0.0149	
292.5	-0.0027	-0.0086	-0.0027	0.0032	0.0091	0.0032	0.0209	0.0622	-0.0029	-0.0029	-0.0029	0.0031	0.0031	0.0090	0.0149	0.0149	
315.0	-0.0027	-0.0086	0.0056	0.0052	0.0032	0.0091	0.0032	0.0209	-0.0088	-0.0029	-0.0029	0.0031	0.0031	0.0149	0.0149	0.0387	
337.5	-0.0027	-0.0086	-0.0027	0.0032	0.0091	0.0032	0.0209	-0.0207	-0.0266	-0.0207	-0.0147	-0.0029	-0.0147	0.0031	-0.0031	-0.0031	
$\alpha=2.0^\circ; w=0.018$								$\alpha=12.0^\circ; w=0.018$									
0.0	-0.0030	-0.0029	-0.0029	0.0090	0.0090	0.0090	0.0208	0.0328	-0.0679	-0.0739	-0.0739	-0.0620	-0.0561	-0.0561	-0.0443	-0.0443	
22.5	-0.0030	-0.0029	0.0149	0.0030	0.0030	0.0090	0.0208	0.0387	-0.0679	-0.0620	-0.0384	-0.0561	-0.0561	-0.0443	-0.0443	-0.0265	
45.0	0.0030	0.0030	0.0149	0.0090	0.0090	0.0149	0.0363	0.0145	-0.0204	-0.0145	-0.0086	-0.0145	-0.0145	-0.0443	-0.0443	0.0803	
67.5	-0.0147	-0.0029	0.0090	0.0090	0.0149	0.0090	0.0208	0.0365	-0.0265	0.0210	0.0330	0.0265	0.0210	0.0448	0.0803	0.0803	
112.5	-0.0326	-0.0029	0.0090	0.0030	0.0149	0.0030	0.0328	0.0526	-0.0981	-0.0365	-0.0145	-0.0086	-0.0145	-0.0443	-0.0443	-0.0443	
135.0	-0.0504	0.0030	0.0149	0.0149	0.0090	0.0149	0.0030	0.0328	-0.0977	-0.0561	-0.0207	-0.0204	-0.0204	-0.0204	-0.0204	-0.0265	
157.5	-0.0440	-0.0029	0.0090	0.0090	0.0149	0.0090	0.0267	0.0526	-0.1807	-0.0800	-0.0502	-0.0384	-0.0443	-0.0620	-0.0204	-0.0265	
180.0	-0.0385	0.0030	0.0090	0.0090	0.0149	0.0090	0.0267	0.0526	-0.2105	-0.0502	-0.0443	-0.0502	-0.0579	-0.0384	-0.0443	-0.0443	
202.5	-0.0206	0.0030	0.0030	0.0090	0.0090	0.0090	0.0208	0.0387	-0.0620	-0.0204	-0.0145	-0.0204	-0.0265	-0.0384	-0.0204	-0.0265	
225.0	-0.0088	0.0030	0.0030	0.0089	0.0030	0.0148	0.0148	0.0266	-0.0504	-0.0385	-0.0325	-0.0207	-0.0325	-0.0447	-0.0207	0.0249	
247.5	-0.0029	-0.0029	0.0030	0.0030	0.0089	0.0089	0.0148	0.0325	-0.0385	-0.0325	-0.0266	-0.0266	-0.0266	-0.0207	-0.0207	-0.0207	
292.5	-0.0088	-0.0029	0.0030	0.0030	0.0148	0.0030	0.0207	0.0620	-0.0325	-0.0325	-0.0207	-0.0147	-0.0088	-0.0229	0.0090	0.0327	
315.0	0.0030	-0.0029	-0.0029	0.0030	0.0089	0.0030	0.0207	-0.0207	-0.0325	-0.0325	-0.0207	-0.0147	-0.0207	-0.0207	-0.0207	-0.0207	
337.5	-0.0027	-0.0086	-0.0029	0.0030	0.0089	0.0030	0.0207	-0.0325	-0.0325	-0.0325	-0.0325	-0.0325	-0.0325	-0.0325	-0.0325	-0.0325	
$\alpha=4.0^\circ; w=0.018$								$\alpha=15.0^\circ; w=0.017$									
0.0	-0.0087	-0.0087	-0.0146	-0.0029	-0.0029	-0.0029	0.0089	0.0207	-0.1036	-0.1095	-0.1036	-0.0918	-0.0859	-0.0918	-0.0670	-0.0739	
22.5	-0.0089	-0.0087	0.0089	-0.0087	-0.0029	0.0030	0.0089	0.0267	-0.1036	-0.0859	-0.0620	-0.0859	-0.0859	-0.0670	-0.0561	-0.0561	
45.0	0.0030	0.0030	0.0148	0.0089	0.0030	0.0089	0.0148	0.0378	-0.0265	-0.0265	-0.0204	-0.0145	-0.0204	-0.0204	-0.0868	0.0803	
67.5	-0.0205	-0.0087	0.0089	0.0030	0.0089	0.0207	0.0365	0.0389	0.0330	0.0448	0.0448	0.0389	0.0626	0.0982	0.0982	0.0982	
112.5	-0.0501	-0.0146	0.0030	-0.0087	0.0089	-0.0029	0.0267	0.0620	-0.0600	-0.0332	-0.0330	-0.0507	0.0448	0.0626	0.0982	0.0982	
135.0	-0.0677	-0.0146	0.0030	0.0030	0.0087	0.0148	0.0267	0.0620	-0.2046	-0.1273	-0.0739	-0.0620	-0.0739	-0.0859	-0.0451	0.0451	
157.5	-0.0524	-0.0029	0.0089	0.0030	0.0030	0.0089	0.0148	0.0365	-0.2461	-0.0800	-0.0739	-0.0859	-0.0977	-0.0620	-0.0800	-0.0800	
180.0	-0.0442	-0.0029	0.0089	0.0030	0.0030	0.0087	0.0207	0.0365	-0.0859	-0.0145	-0.0145	-0.0324	-0.0384	-0.0265	-0.0986	-0.0986	
202.5	-0.0264	-0.0029	0.0029	0.0030	0.0030	0.0089	0.0148	0.0207	-0.0675	-0.0325	-0.0327	-0.0327	-0.0207	-0.0032	0.0210	0.0210	
225.0	-0.0147	-0.0029	0.0030	0.0089	0.0030	0.0089	0.0148	0.0207	-0.0675	-0.0323	-0.0323	-0.0323	-0.0207	-0.0032	-0.0032	-0.0032	
247.5	-0.0029	-0.0029	0.0030	0.0089	0.0030	0.0089	0.0148	0.0266	-0.0675	-0.0323	-0.0323	-0.0323	-0.0207	-0.0032	-0.0032	-0.0032	
292.5	-0.0088	-0.0029	0.0030	0.0089	0.0030	0.0089	0.0148	0.0502	-0.0675	-0.0323	-0.0323	-0.0323	-0.0207	-0.0032	-0.0032	-0.0032	
315.0	-0.0088	-0.0147	-0.0088	-0.0029	0.0030	-0.0029	0.0148	-0.0440	-0.0640	-0.0640	-0.0325	-0.0205	-0.0205	-0.0205	-0.0147	-0.0147	
337.5	-0.0088	-0.0147	-0.0088	-0.0029	0.0030	-0.0029	0.0148	-0.0440	-0.0640	-0.0640	-0.0325	-0.0205	-0.0205	-0.0205	-0.0147	-0.0147	

TABLE VI.- Continued.

(e) $\beta = 90^\circ$; $M = 1.00$.

θ , deg	$(p - p_\infty)/p_\infty$ for longitudinal station								$(p - p_\infty)/p_\infty$ for longitudinal station							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
$\alpha=0^\circ; w=0.018$																
0.0	0.0410	0.0546	0.0481	0.0546	0.0417	0.0417	0.0610	0.0801	0.0226	0.0162	0.0098	0.0162	0.0098	0.0035	0.0290	0.0353
22.5	0.0410	0.0546	0.0481	0.0546	0.0417	0.0481	0.0546	0.0801	-0.0290	0.0162	0.0098	0.0162	0.0098	0.0162	0.0290	0.0353
45.0	0.0410	0.0546	0.0481	0.0546	0.0417	0.0481	0.0546	0.121	0.0590	0.0481	0.0481	0.0481	0.0481	0.0481	0.0481	0.0481
67.5	0.0410	0.0546	0.0481	0.0546	0.0417	0.0546	0.0546	0.0801	0.0737	0.0674	0.0801	0.0674	0.0674	0.0674	0.0674	0.0674
112.5	0.0417	0.0481	0.0546	0.0481	0.0546	0.0417	0.0546	0.0865	0.0353	0.0417	0.0737	0.0546	0.0546	0.0546	0.0546	0.0546
135.0	0.0226	0.0546	0.0610	0.0481	0.0546	0.0353	0.0674	0.1056	-0.0540	0.0290	0.0610	0.0290	0.0546	0.0226	0.0674	0.1185
157.5	0.0356	0.0674	0.0674	0.0610	0.0546	0.0417	0.0674	0.0801	-0.0497	0.0162	0.0353	0.0226	-0.0029	0.0481	0.0481	0.0481
180.0	0.0162	0.0546	0.0610	0.0546	0.0481	0.0417	0.0674	0.0874	-0.0035	0.0417	0.0417	0.0553	0.0290	0.0162	0.0353	0.0290
202.5	0.0353	0.0546	0.0546	0.0481	0.0481	0.0481	0.0546	0.0992	0.0226	0.0417	0.0417	0.0417	0.0353	0.0417	0.0481	0.0674
225.0	0.0421	0.0550	0.0550	0.0550	0.0421	0.0485	0.0485	0.0741	0.0293	0.0421	0.0421	0.0421	0.0357	0.0421	0.0357	0.0485
247.5	0.0614	0.0550	0.0550	0.0485	0.0485	0.0485	0.0485	0.0805	0.0421	0.0421	0.0421	0.0357	0.0421	0.0357	0.0421	0.0485
292.5	0.0465	0.0550	0.0485	0.0550	0.0421	0.0614	0.1126		0.0357	0.0293	0.0230	0.0293	0.0357	0.0230	0.0421	
315.0	0.0614	0.0485	0.0485	0.0485	0.0550	0.0421	0.0614									
337.5									0.0357	0.0293	0.0230	0.0293	0.0357	0.0230	0.0421	
$\alpha=2.0^\circ; w=0.018$																
0.0	0.0410	0.0546	0.0481	0.0481	0.0417	0.0417	0.0610	0.0737	-0.0095	-0.0158	-0.0286	-0.0158	-0.0158	-0.0349	-0.0029	-0.0095
22.5	0.0410	0.0546	0.0674	0.0481	0.0417	0.0481	0.0546	0.0801	-0.0095	-0.0029	0.0162	-0.0095	-0.0222	-0.0095	0.0035	0.0226
45.0	0.0410	0.0546	0.0546	0.0481	0.0481	0.0546	0.0546	0.1121	0.0417	0.0417	0.0417	0.0290	0.0353	0.1312		
67.5	0.0417	0.0481	0.0610	0.0546	0.0546	0.0417	0.0610	0.0865	0.0801	0.0928	0.0865	0.0737	0.0928	0.1312		
112.5	0.0162	0.0546	0.0610	0.0481	0.0546	0.0546	0.0737	0.1056	-0.0540	-0.0222	0.0546	0.0290	0.0546	0.0467	0.0865	0.1185
135.0	0.0094	0.0610	0.0610	0.0481	0.0353	0.0610	0.0737		-0.1436	-0.0099	0.0098	0.0098	-0.029	-0.0286	0.0226	0.0162
157.5	0.0099	0.0610	0.0610	0.0481	0.0353	0.0610	0.0737		-0.1500	0.0035	-0.0029	-0.0158	-0.0413	0.0035	-0.0158	
180.0	0.0162	0.0546	0.0674	0.0610	0.0481	0.0353	0.0674		-0.0029	0.0353	0.0226	0.0098	-0.0029	0.0226	0.0417	
202.5	0.0353	0.0546	0.0546	0.0481	0.0417	0.0481	0.0546	0.0801	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	0.0417	
225.0	0.0417	0.0546	0.0546	0.0481	0.0417	0.0481	0.0546	0.0805	0.0421	0.0421	0.0421	0.0421	0.0421	0.0421	0.0421	
247.5	0.0546	0.0481	0.0481	0.0417	0.0481	0.0417	0.0481	0.0674	-0.0098	0.0035	0.0098	0.0162	0.0353	0.0998	0.0290	
292.5	0.0481	0.0546	0.0417	0.0481	0.0417	0.0481	0.0417	0.0674	-0.0035	0.0035	0.0025	-0.0029	0.0035	0.0035	0.0226	
315.0	0.0610	0.0481	0.0481	0.0481	0.0353	0.0610	0.1056		0.0226	0.0226	0.0290	0.0290	0.0162	0.0353		
337.5																
$\alpha=4.0^\circ; w=0.018$																
0.0	0.0481	0.0417	0.0353	0.0417	0.0353	0.0353	0.0481	0.0737	-0.0286	-0.0477	-0.0380	-0.0413	-0.0447	-0.0606	-0.0222	-0.0477
22.5	0.0481	0.0546	0.0353	0.0481	0.0417	0.0481	0.1249		-0.0349	-0.0232	0.0098	-0.0413	-0.0447	-0.0349	-0.0349	-0.0349
45.0	0.0546	0.0546	0.0481	0.0481	0.0417	0.0481	0.1249		0.0290	0.0290	0.0353	0.0353	0.0226	0.0290	0.1312	
67.5	0.0674	0.0610	0.0674	0.0546	0.0417	0.0610	0.0928		0.0801	0.0865	0.1058	0.0992	0.0865	0.1058		
112.5	0.0417	0.0481	0.0610	0.0546	0.0417	0.0610	0.0992		0.0737	0.0353	0.0865	0.0865	0.0992	0.0992	0.1440	
135.0	-0.0095	0.0481	0.0610	0.0417	0.0353	0.0290	0.0674	0.121	-0.015	-0.0540	0.0481	0.0226	0.0481	0.0098	0.0558	0.1185
157.5	-0.0158	0.0481	0.0546	0.0546	0.0417	0.0226	0.0610	0.0674	-0.1754	-0.1372	0.0481	0.0226	0.0481	0.0481	0.0481	
180.0	-0.0349	0.0610	0.0546	0.0417	0.0290	0.0610	0.0546		-0.1948	-0.0286	-0.0286	-0.0477	-0.0797	-0.0384	-0.0540	
202.5	-0.0098	0.0481	0.0546	0.0417	0.0417	0.0290	0.0481	0.0737	-0.0222	0.0353	0.0353	0.0098	-0.0229	0.0162	0.0290	
225.0	0.0417	0.0481	0.0481	0.0417	0.0417	0.0417	0.0481	0.0801	-0.0222	0.0162	0.0353	0.0353	0.0290	0.0417	0.0610	
247.5	0.0420	0.0548	0.0481	0.0481	0.0417	0.0417	0.0481	0.0805	-0.0285	-0.0093	-0.029	0.0035	-0.0093	0.0163	0.0099	0.0418
292.5	0.0548	0.0484	0.0484	0.0420	0.0484	0.0484	0.0548	0.0676	-0.0221	-0.041	-0.041	-0.0414	-0.0157	-0.0157	-0.0093	0.0227
315.0	0.0484	0.0484	0.0420	0.0420	0.0484	0.0420	0.0548	0.0932	-0.0093	-0.0093	-0.0093	0.0227	0.0418	0.0418	0.0418	0.0418
337.5	0.0548	0.0420	0.0420	0.0420	0.0484	0.0356	0.0548		0.0227	0.0163	0.0163	0.0163	0.0227	0.0163	0.0290	

TABLE VI.- Concluded.

(f) $\theta = 90^\circ$; $M = 1.03$

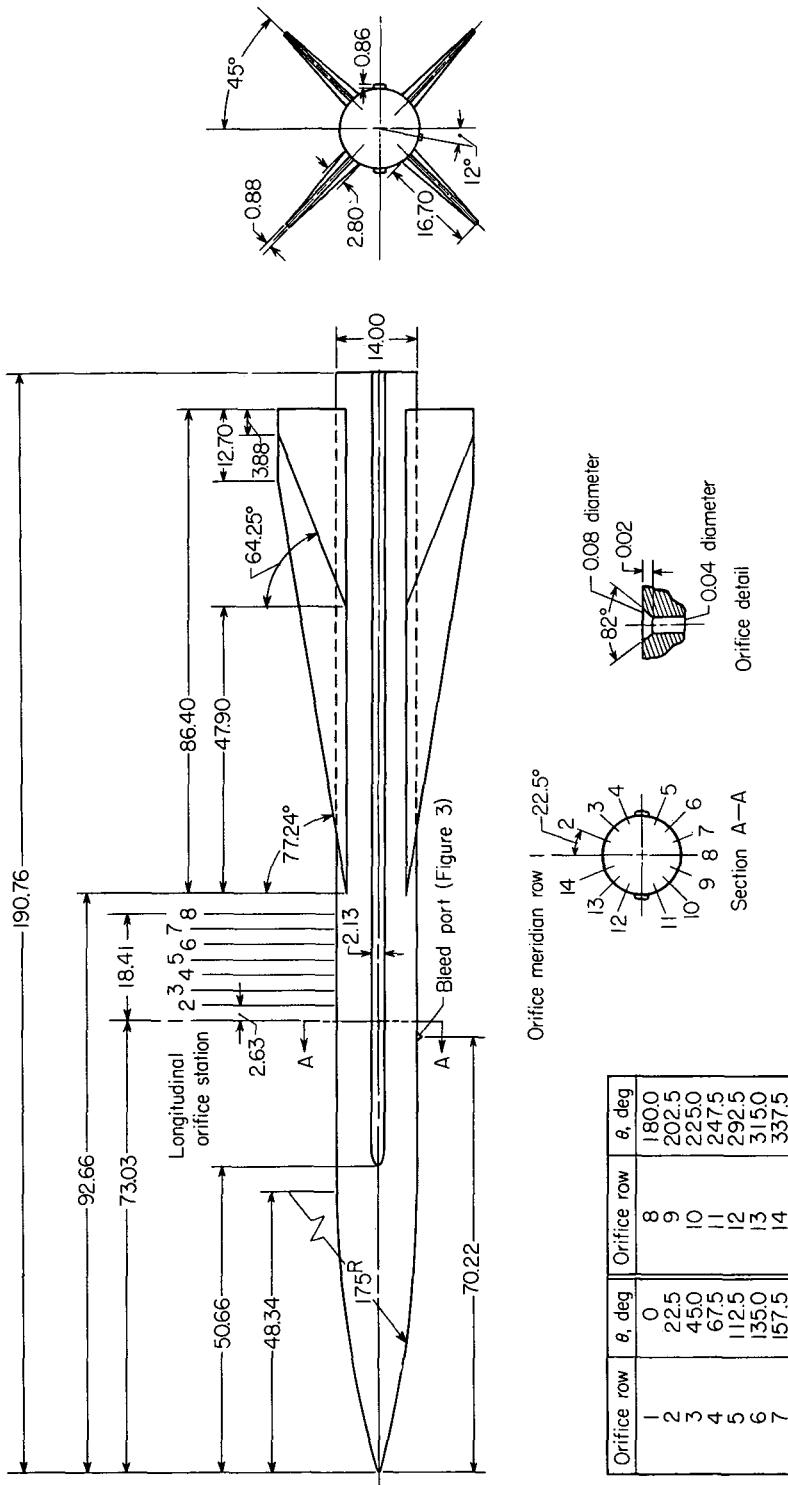


Figure 1.- Sketch of model. All dimensions are in inches unless otherwise noted.

~~CONFIDENTIAL~~

Reproduced from
best available copy.



L-60-4840

Figure 2.- Photograph of model sting mounted in the Langley 16-foot transonic tunnel.

~~CONFIDENTIAL~~

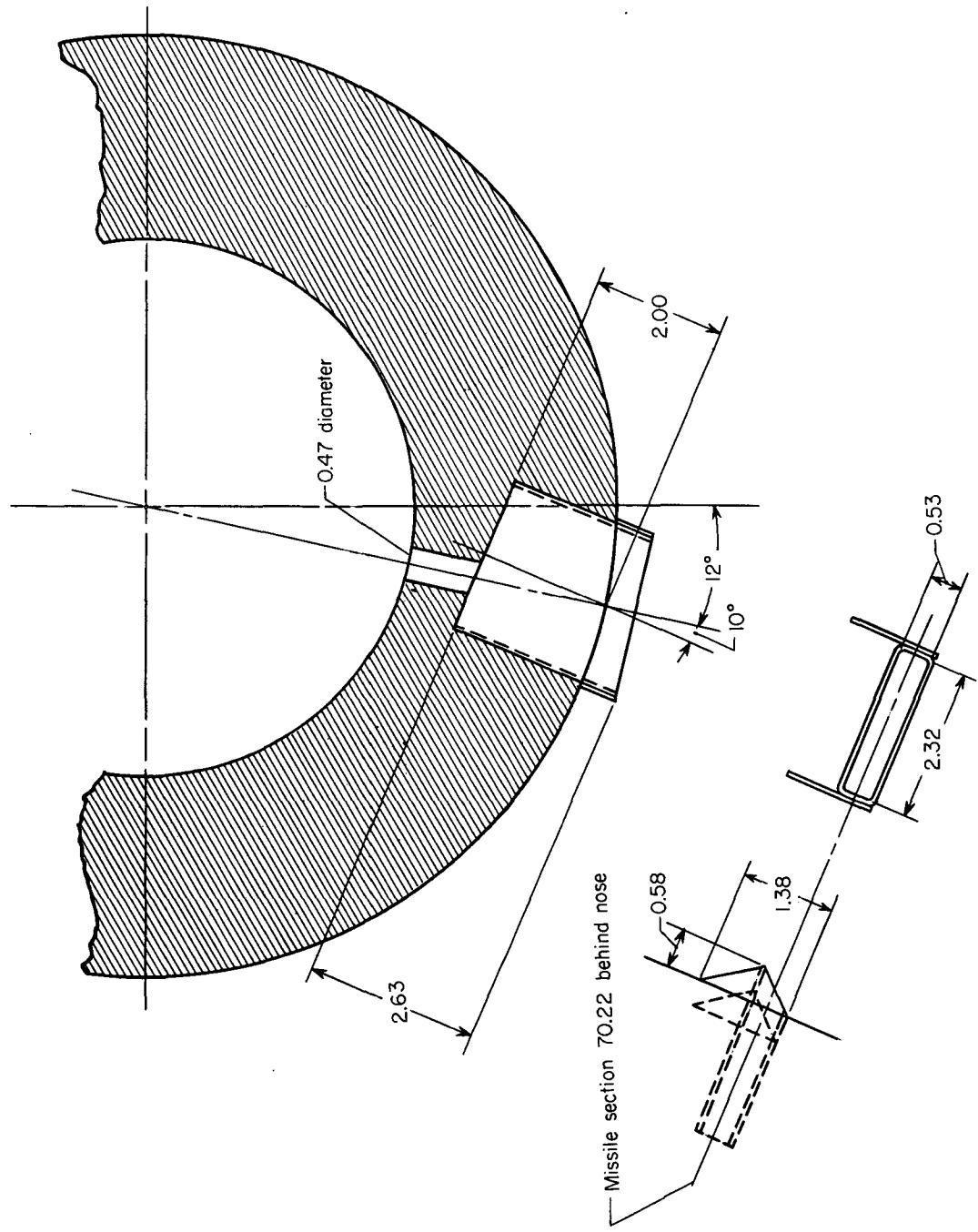
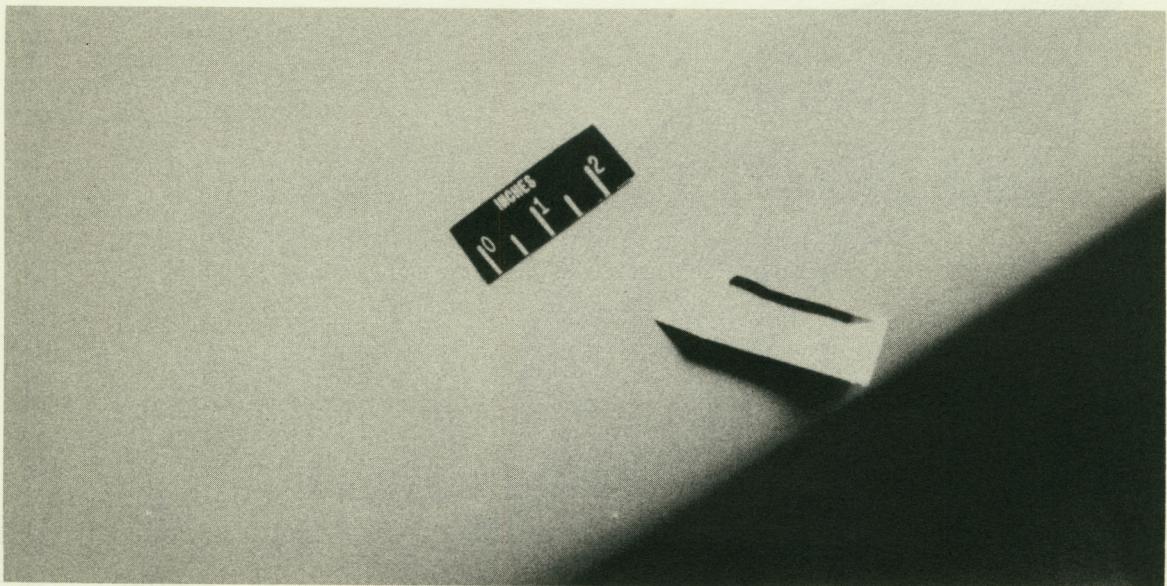
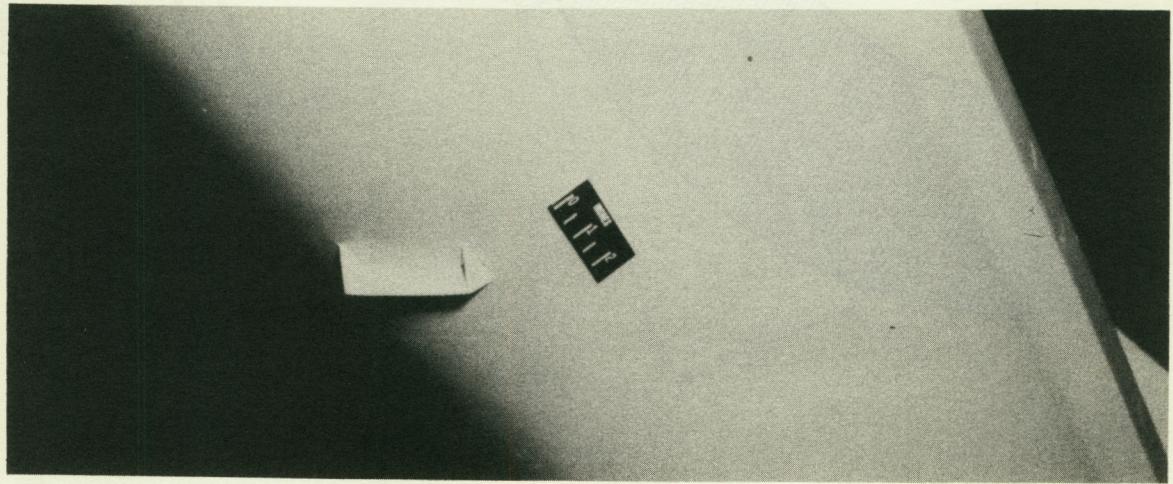


Figure 3.- Details of auxiliary exhaust bleed port. All dimensions are in inches unless otherwise noted.

~~CONFIDENTIAL~~

(a) As viewed from downstream.

L-60-4843



(b) As viewed from upstream.

L-60-4842

Figure 4.- Photographs of auxiliary exhaust bleed port.

~~CONFIDENTIAL~~

1000-1

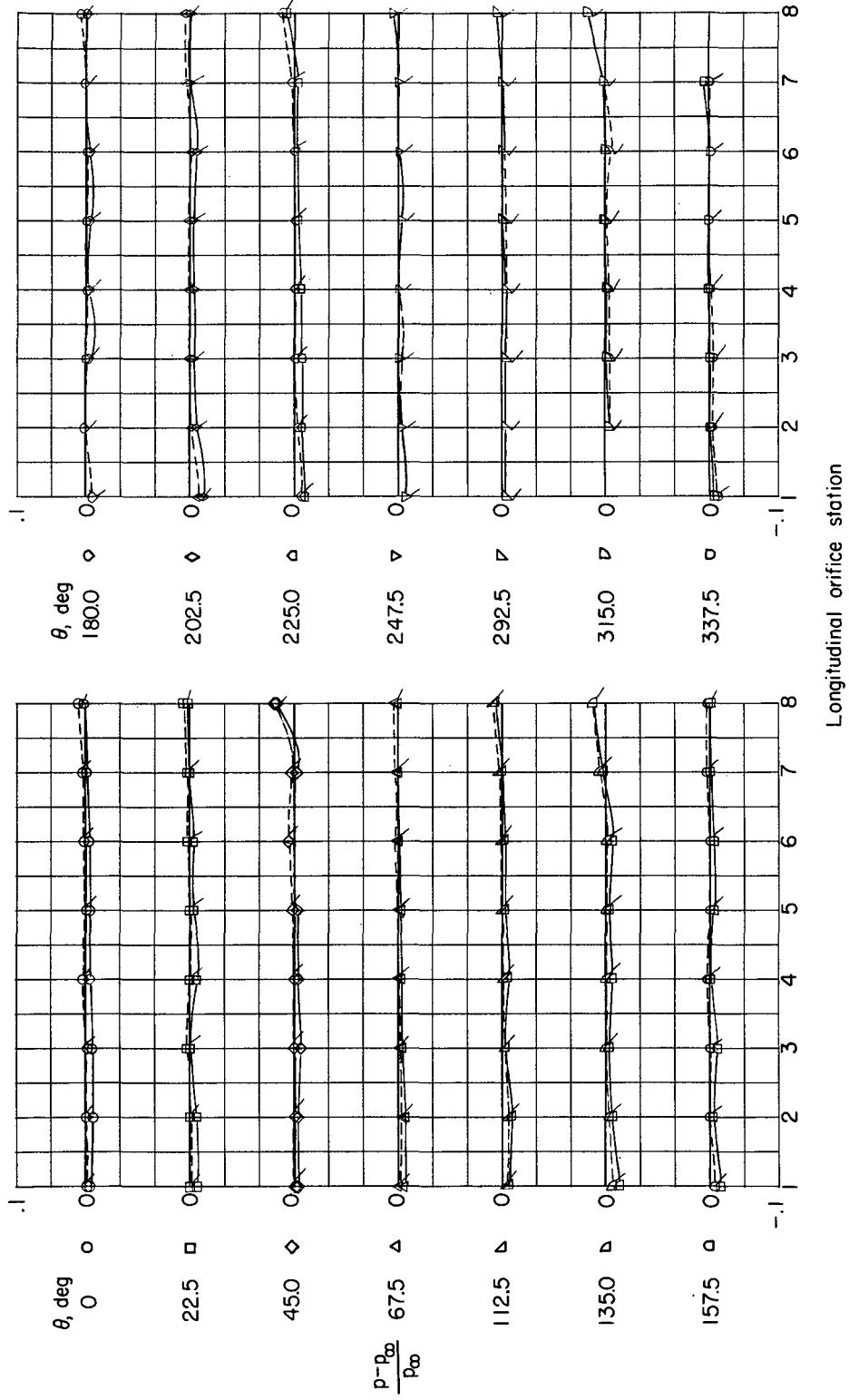
(a) $\alpha = -2.0^\circ$.

Figure 5.- Variation of static-pressure error coefficient with longitudinal orifice station for $\phi = 0^\circ$, $M = 0.70$, and $w = 0.018$ lb/sec. (Flagged symbols indicate exhaust bleed on.)

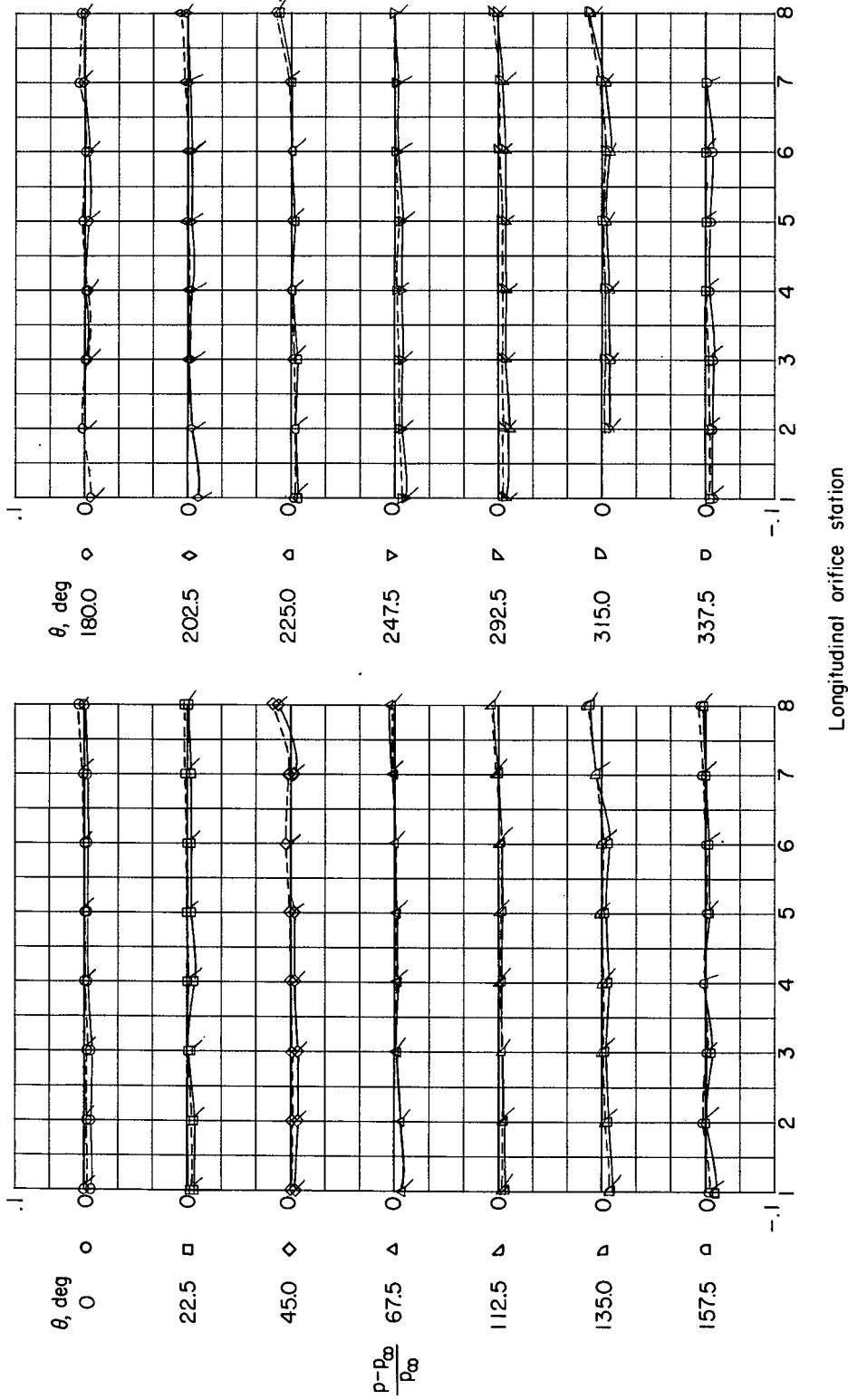
(b) $\alpha = 0^\circ$.

Figure 5.- Continued.

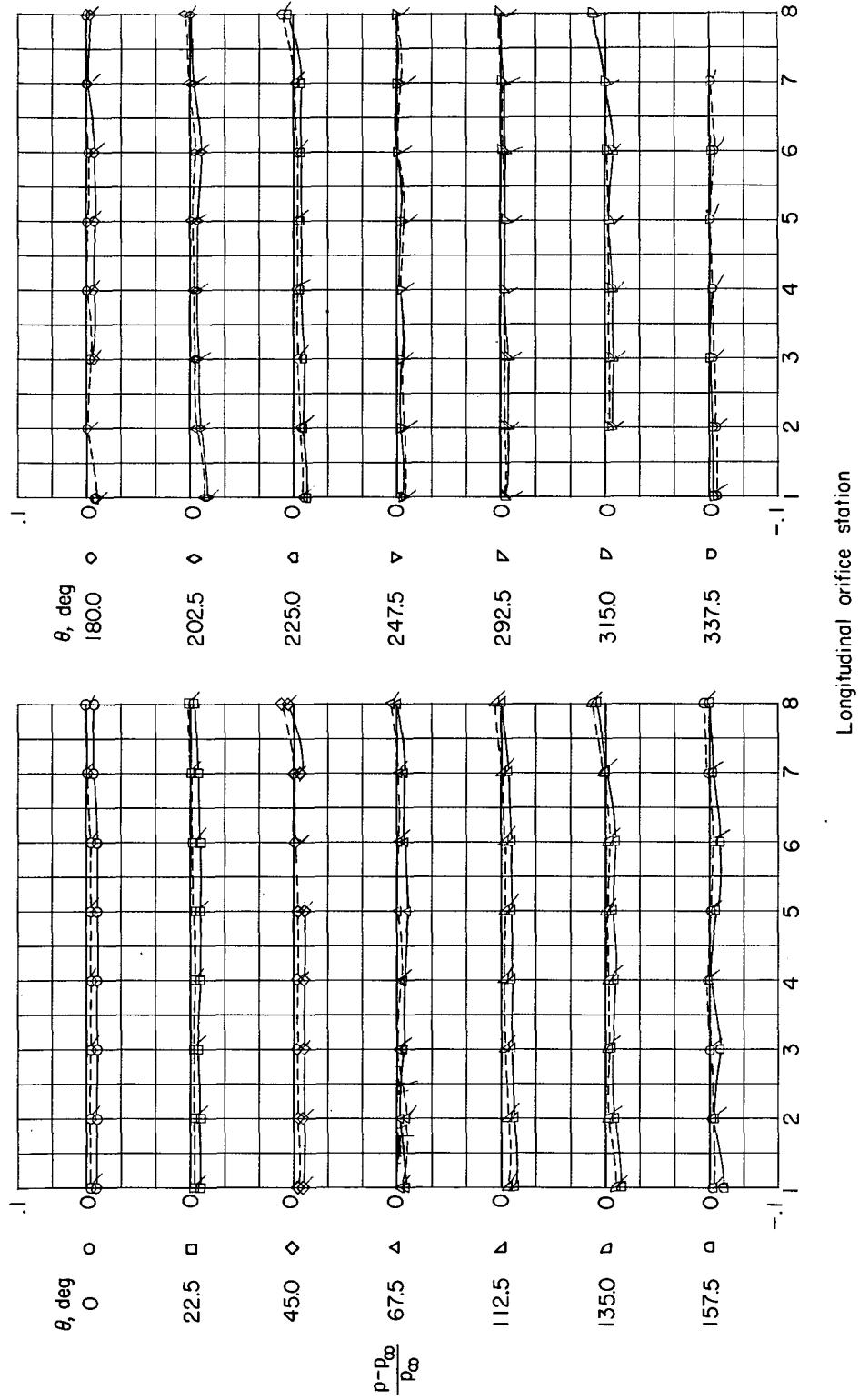


Figure 5.- Continued.

(c) $\alpha = 2.0^\circ$.

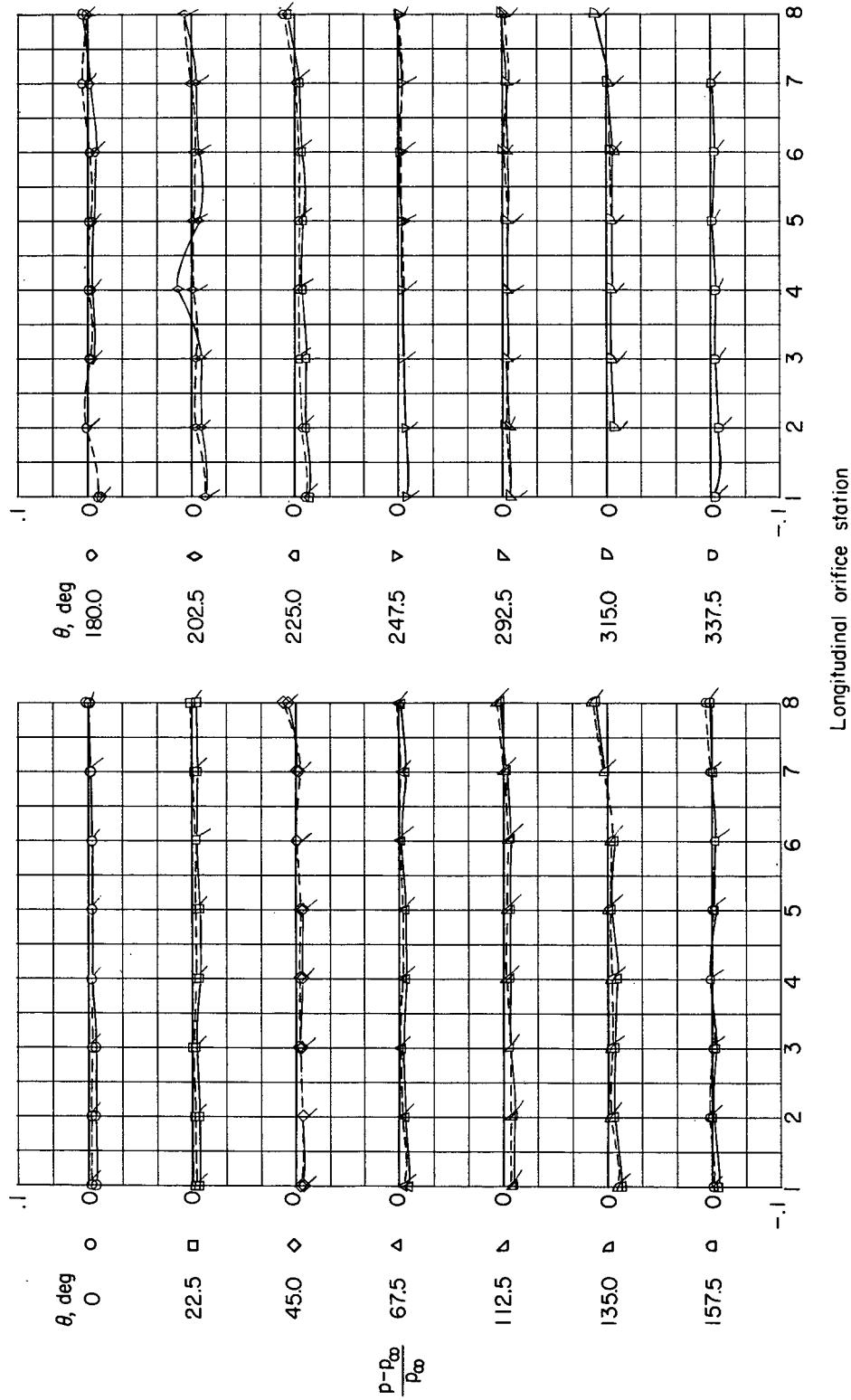
(d) $\alpha = 4.0^\circ$.

Figure 5.- Continued.

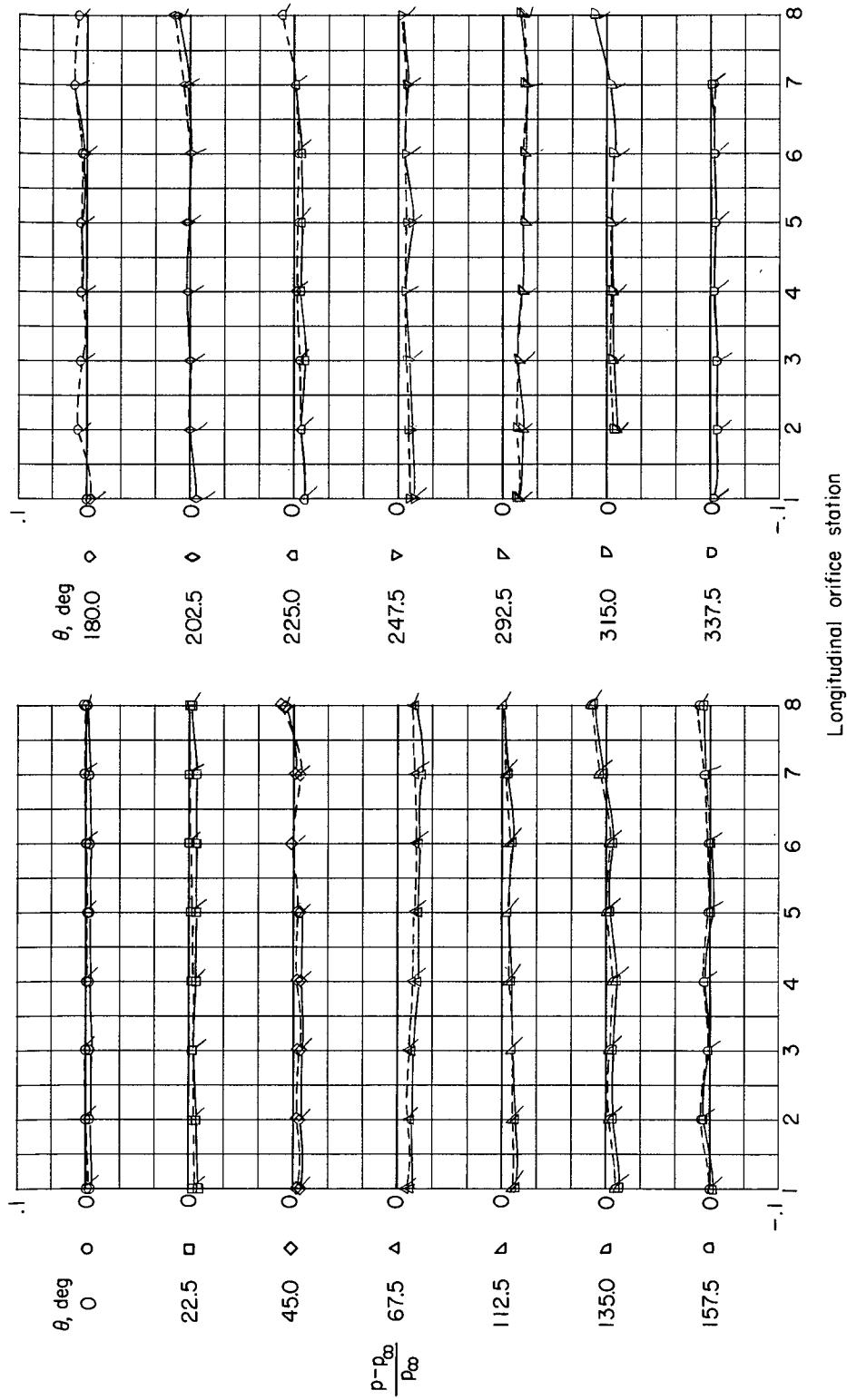
(e) $\alpha = 8.0^\circ$.

Figure 5.- Continued.

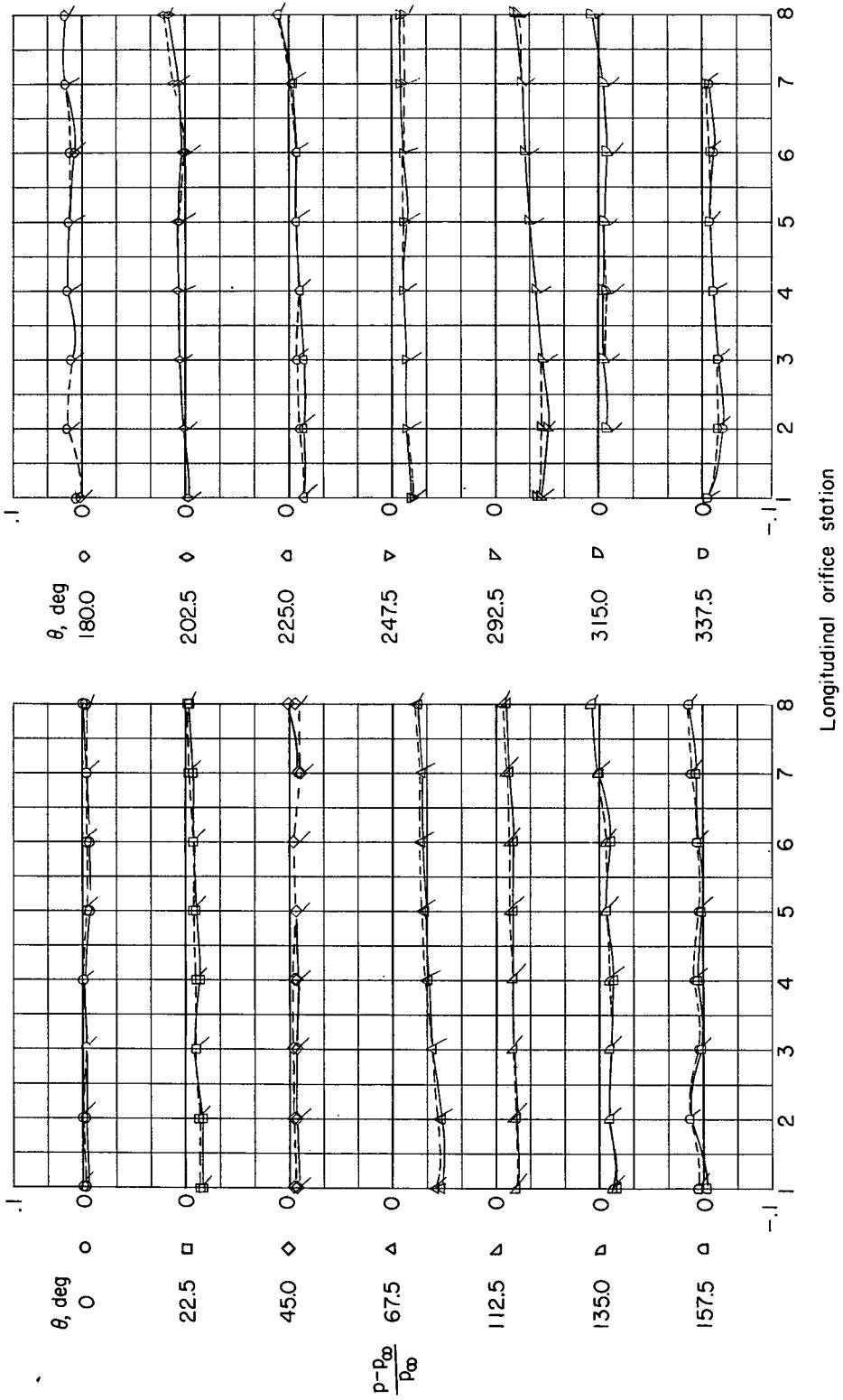
(f) $\alpha = 12.0^\circ$.

Figure 5.- Continued.

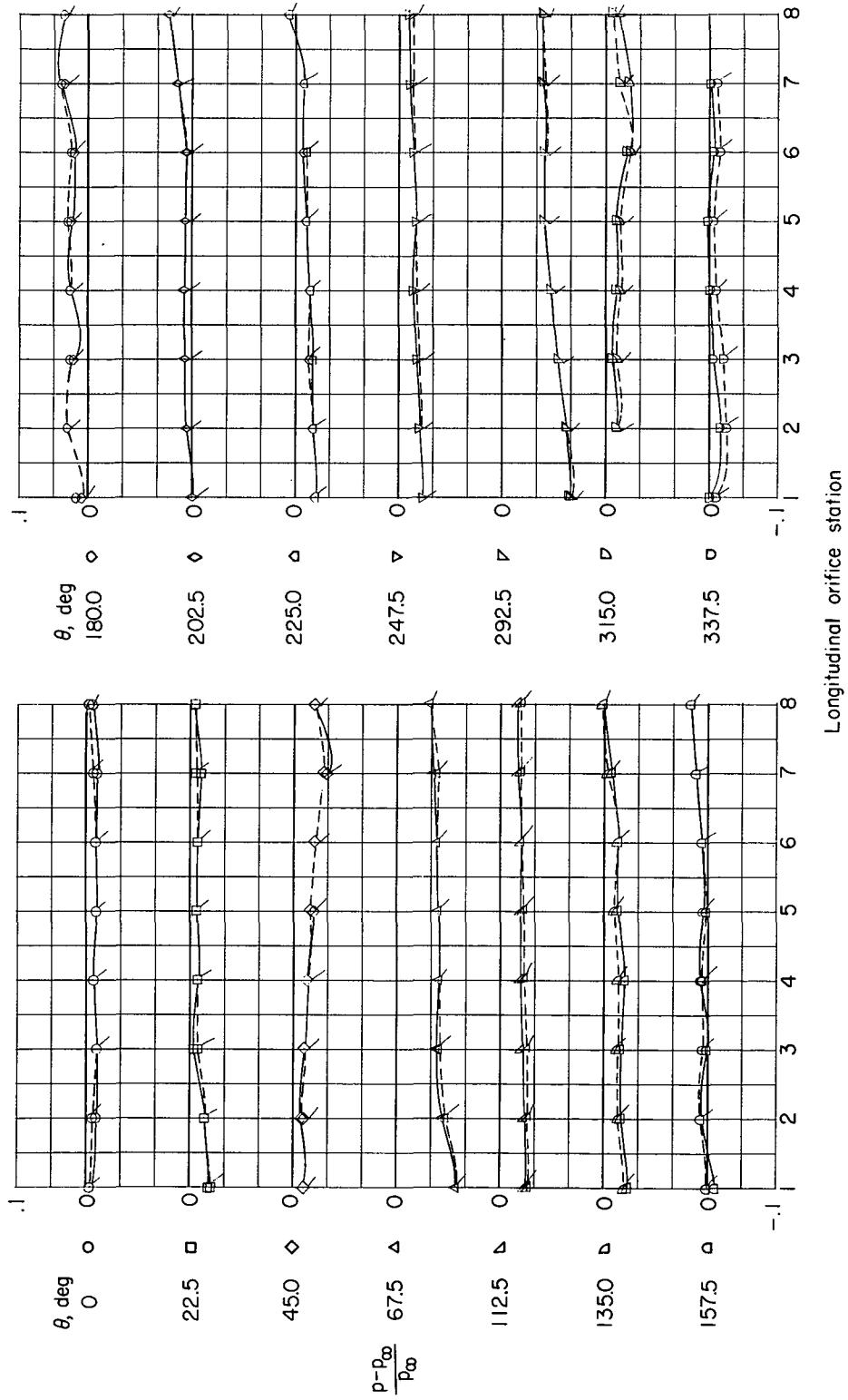
(g) $\alpha = 15.1^\circ$.

Figure 5.- Concluded.

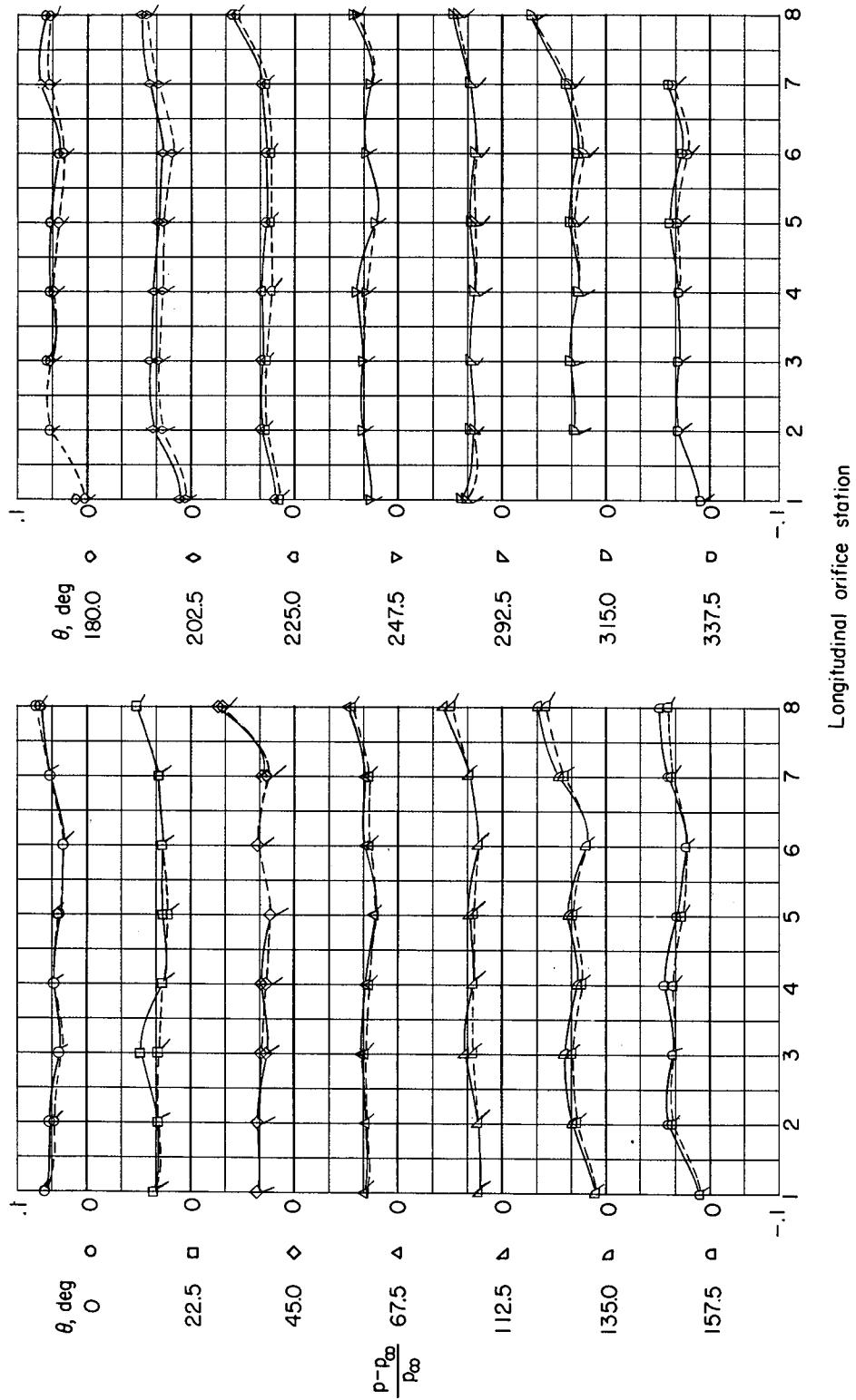
(a) $\alpha = -2.1^\circ$.

Figure 6.- Variation of static-pressure error coefficient with longitudinal orifice station for $\phi = 0^\circ$, $M = 1.00$, and $w = 0.018 \text{ lb/sec}$. (Flagged symbols indicate exhaust bleed on.)

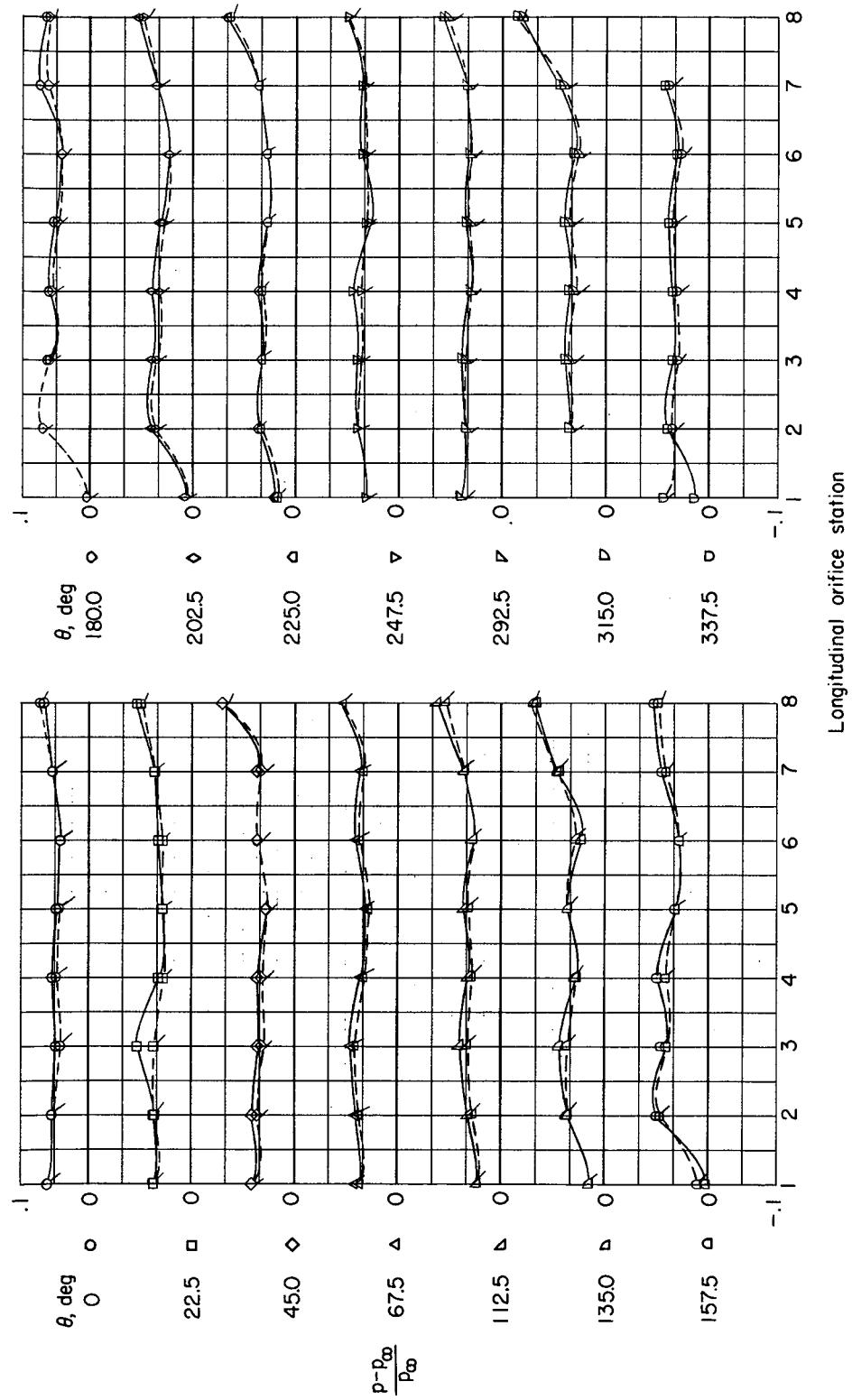
(b) $\alpha = -0.1^\circ$.

Figure 6.- Continued.

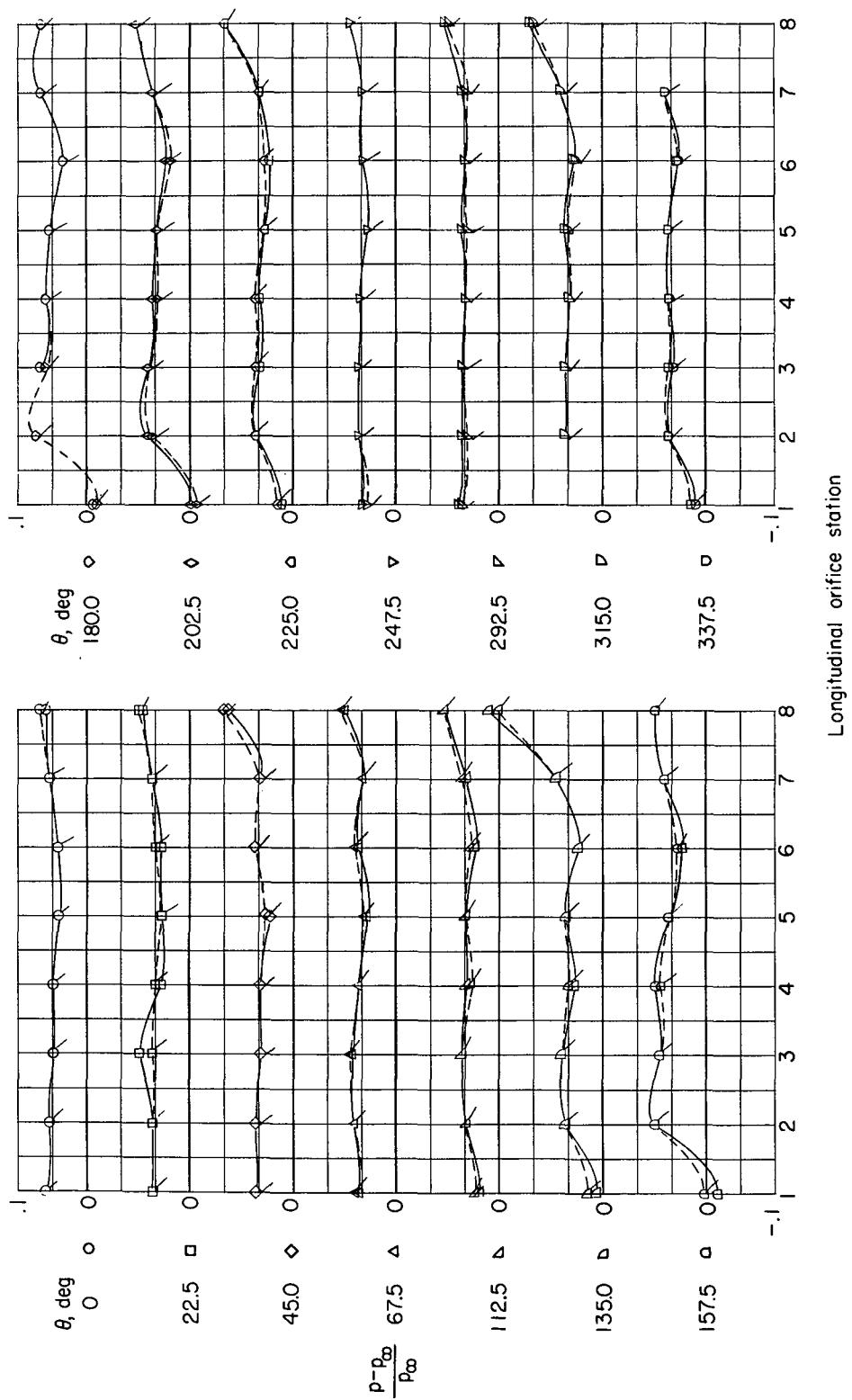
(c) $\alpha = 2.0^\circ$.

Figure 6.- Continued.

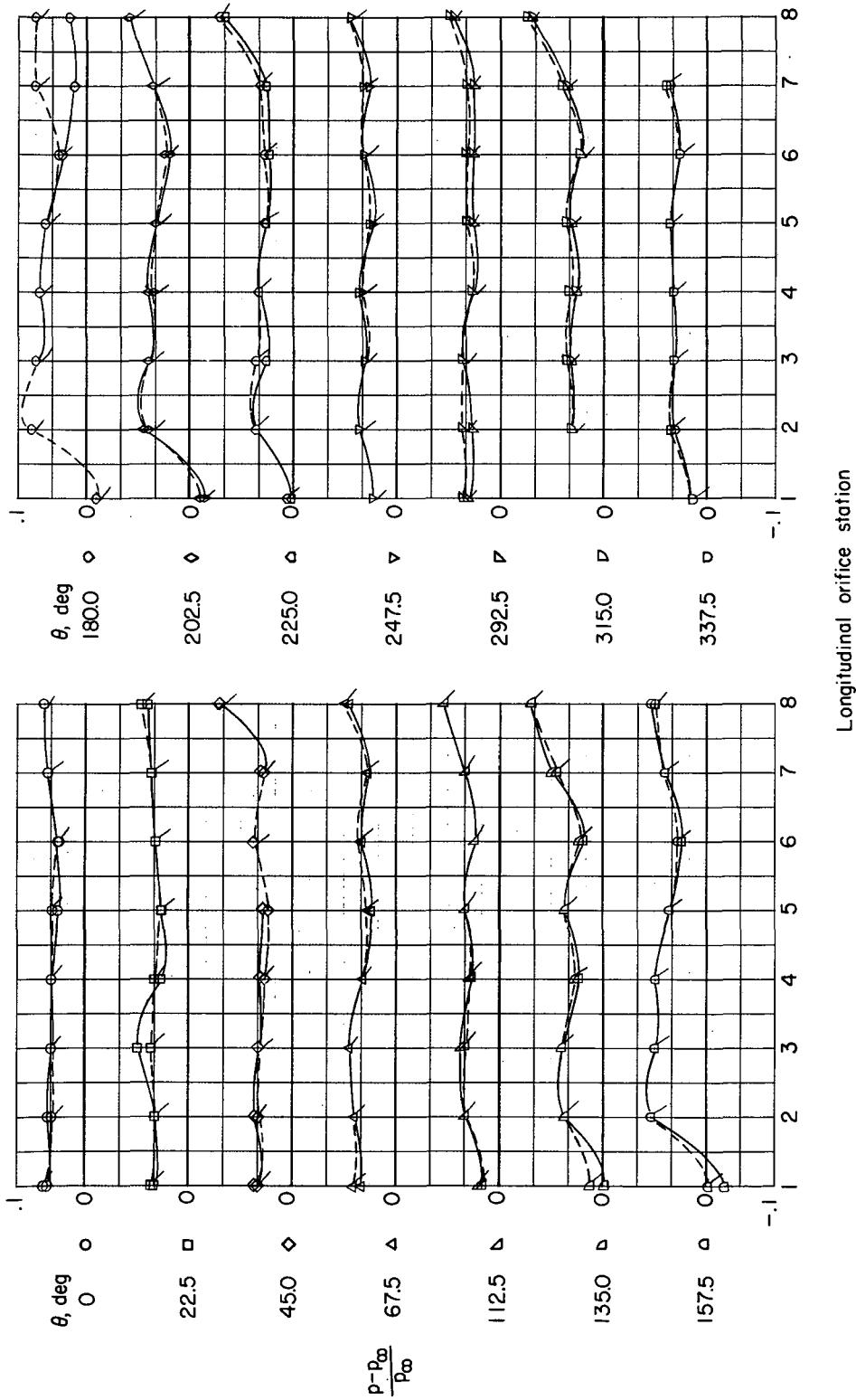
(d) $\alpha = 4.0^\circ$.

Figure 6.- Continued.

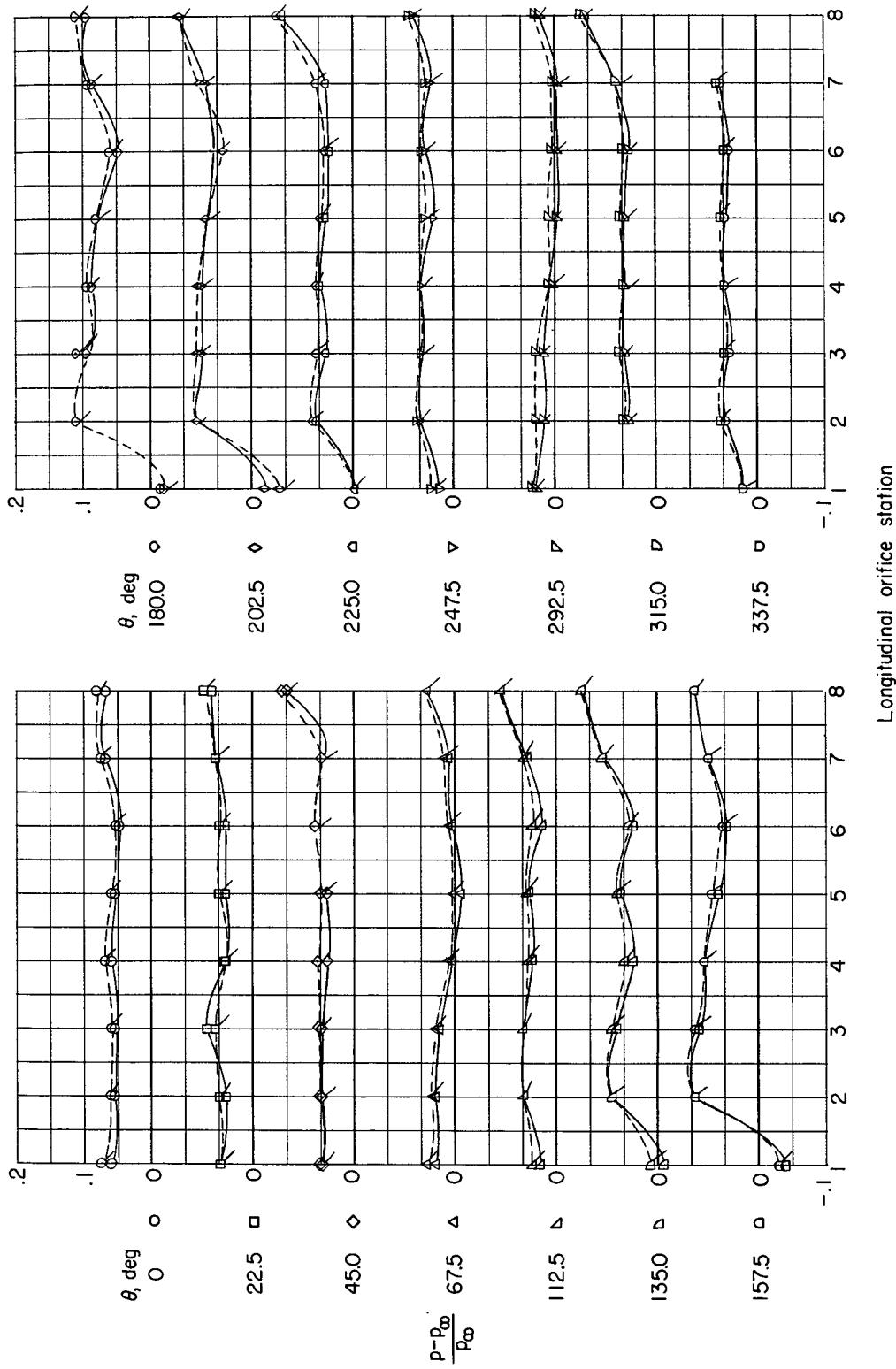
(e) $\alpha = 8.0^\circ$.

Figure 6.- Concluded.

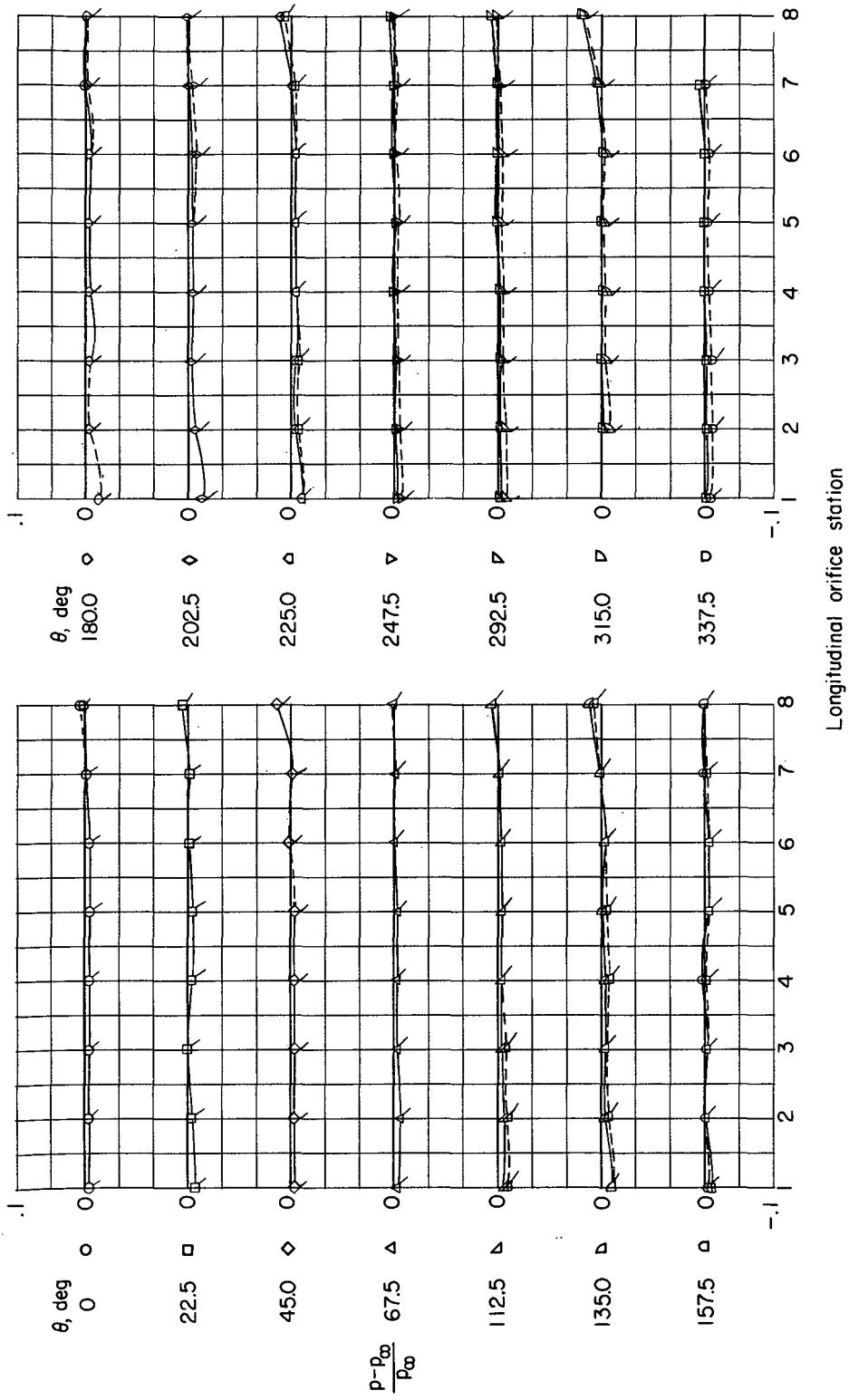
(a) $\alpha = 0^\circ$.

Figure 7.- Variation of static-pressure error coefficient with longitudinal orifice station for $\phi = 45^\circ$, $M = 0.70$, and $w = 0.018$ lb/sec. (Flagged symbols indicate exhaust bleed on.)

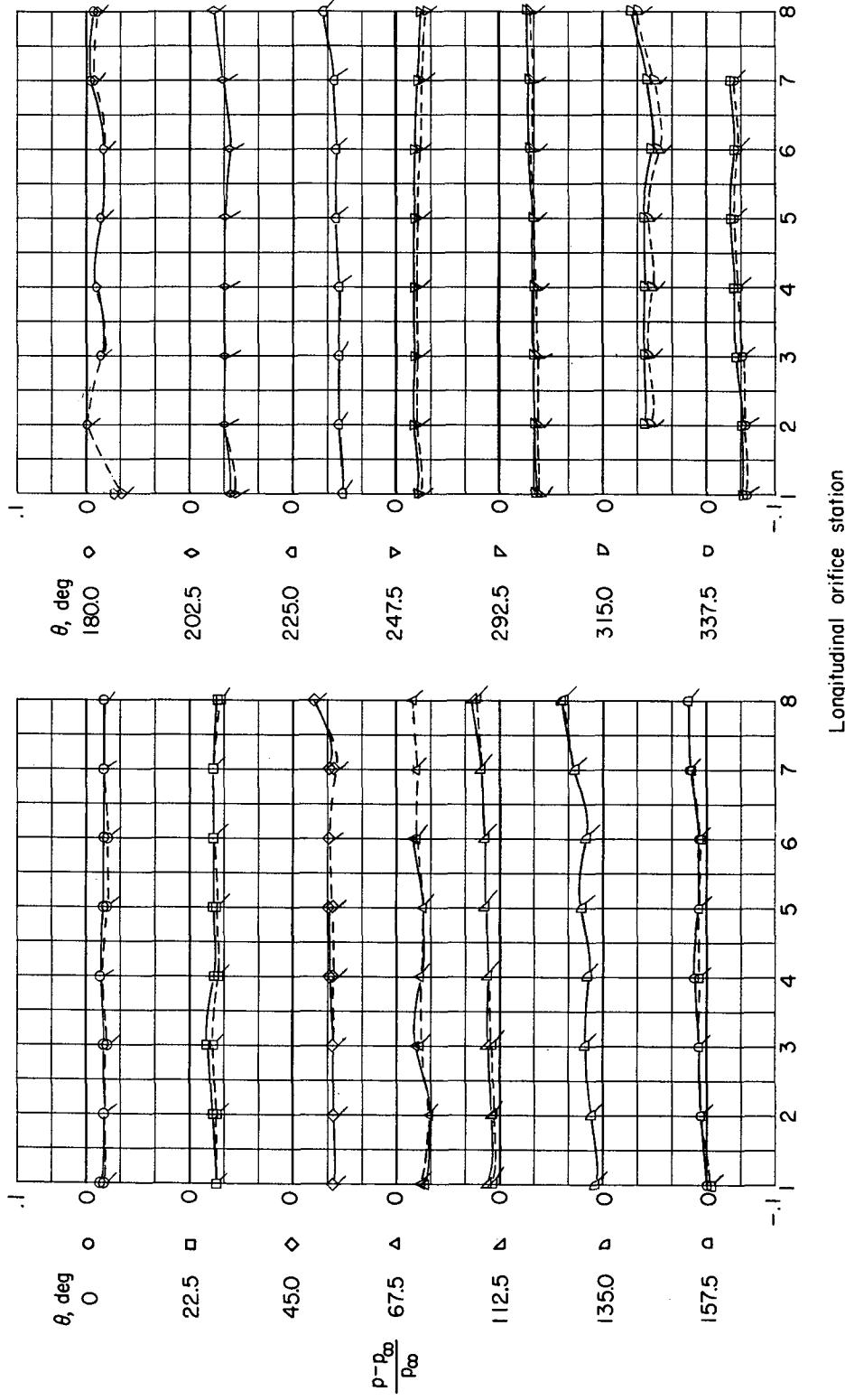
(b) $\alpha = 8.0^\circ$.

Figure 7.- Concluded.

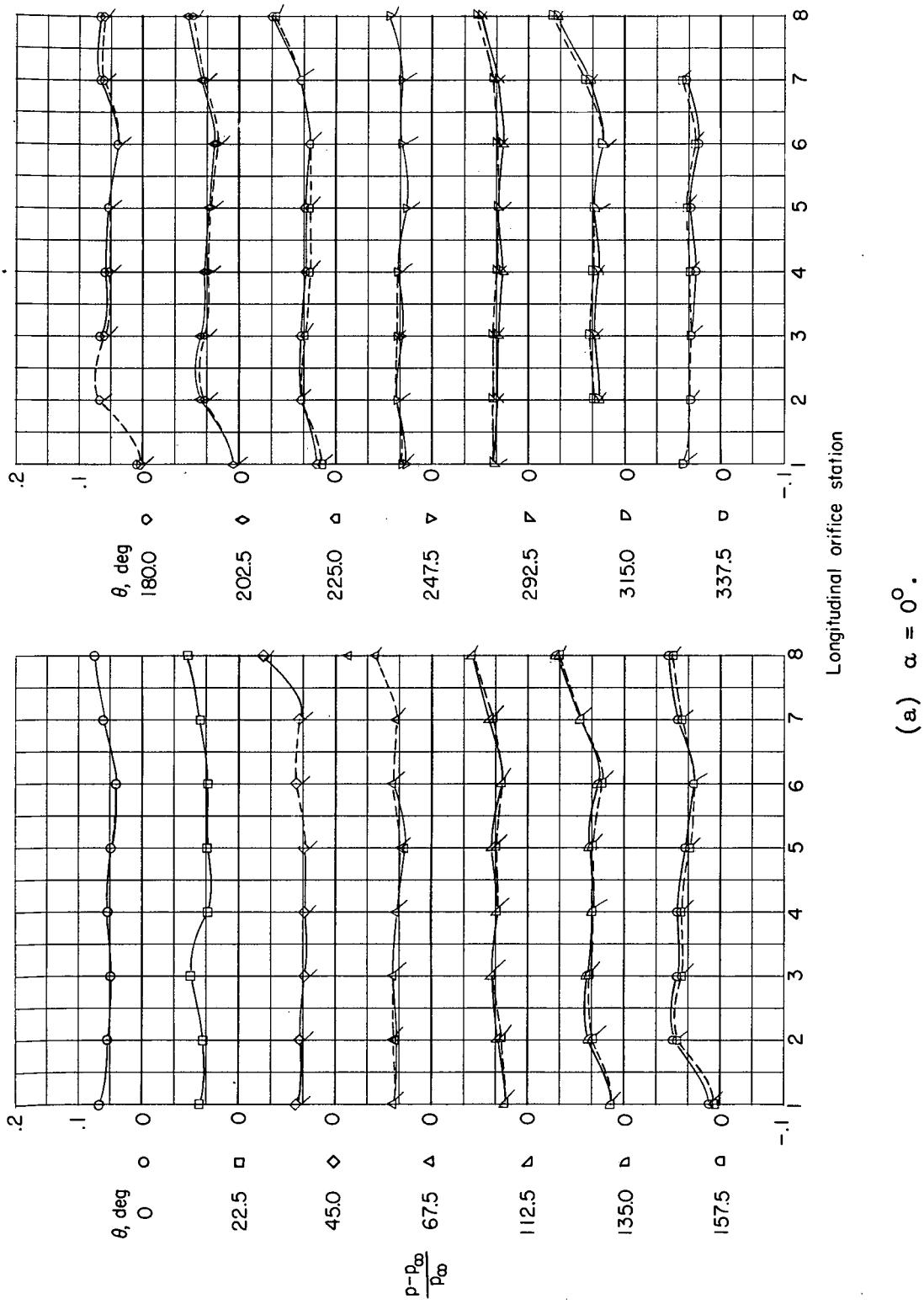
(a) $\alpha = 0^\circ$.

Figure 8.- Variation of static-pressure error coefficient with longitudinal orifice station for $\phi = 45^\circ$, $M = 1.00$, and $w = 0.019$ lb/sec. (Flagged symbols indicate exhaust bleed on.)

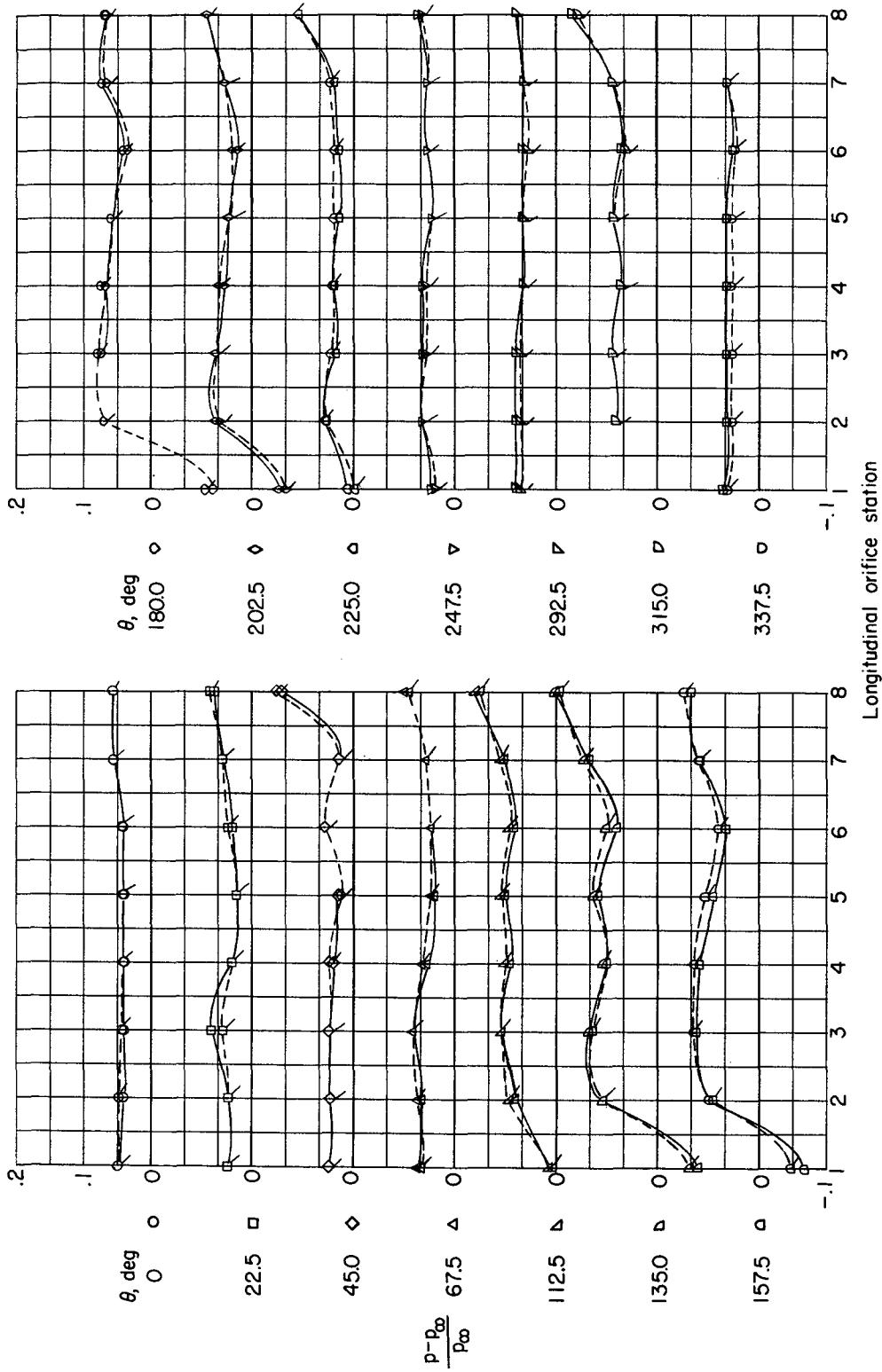
(b) $\alpha = 8.0^\circ$.

Figure 8.- Concluded.

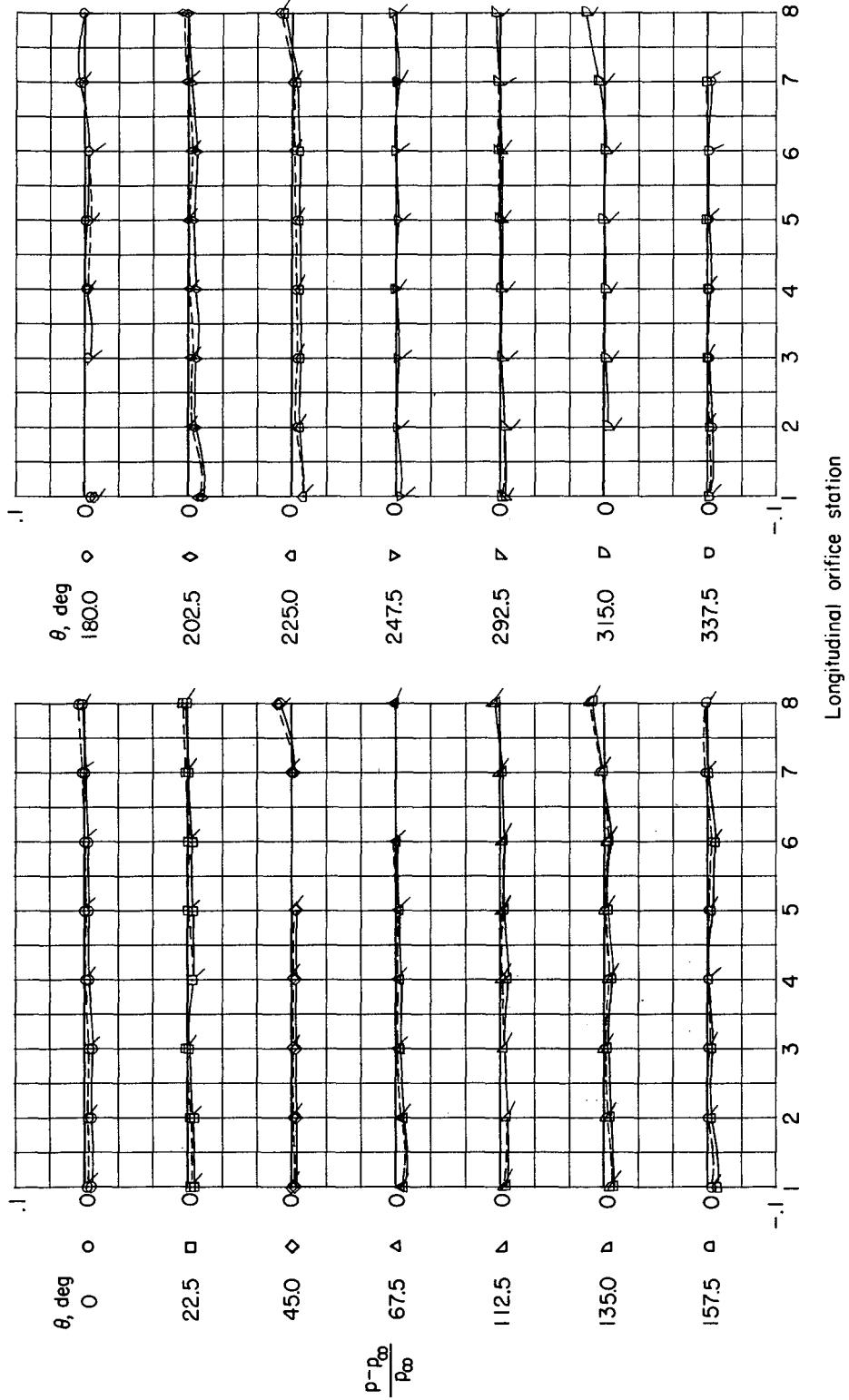


Figure 9.- Variation of static-pressure error coefficient with longitudinal orifice station for $\phi = 90^\circ$, $M = 0.70$, and $w = 0.018 \text{ lb/sec}$. (Flagged symbols indicate exhaust bleed on.)

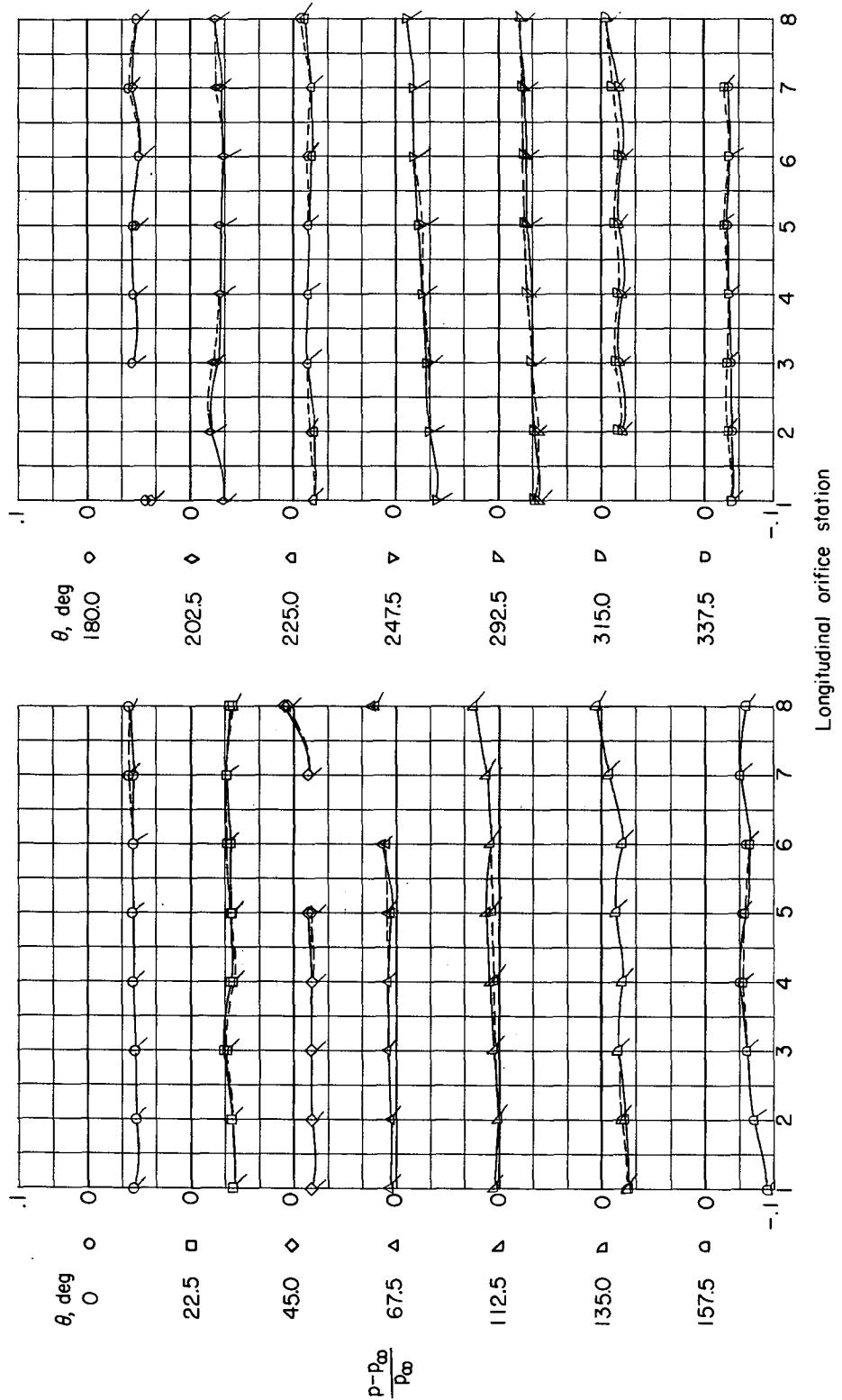
(b) $\alpha = 7.9^\circ$.

Figure 9.- Concluded.

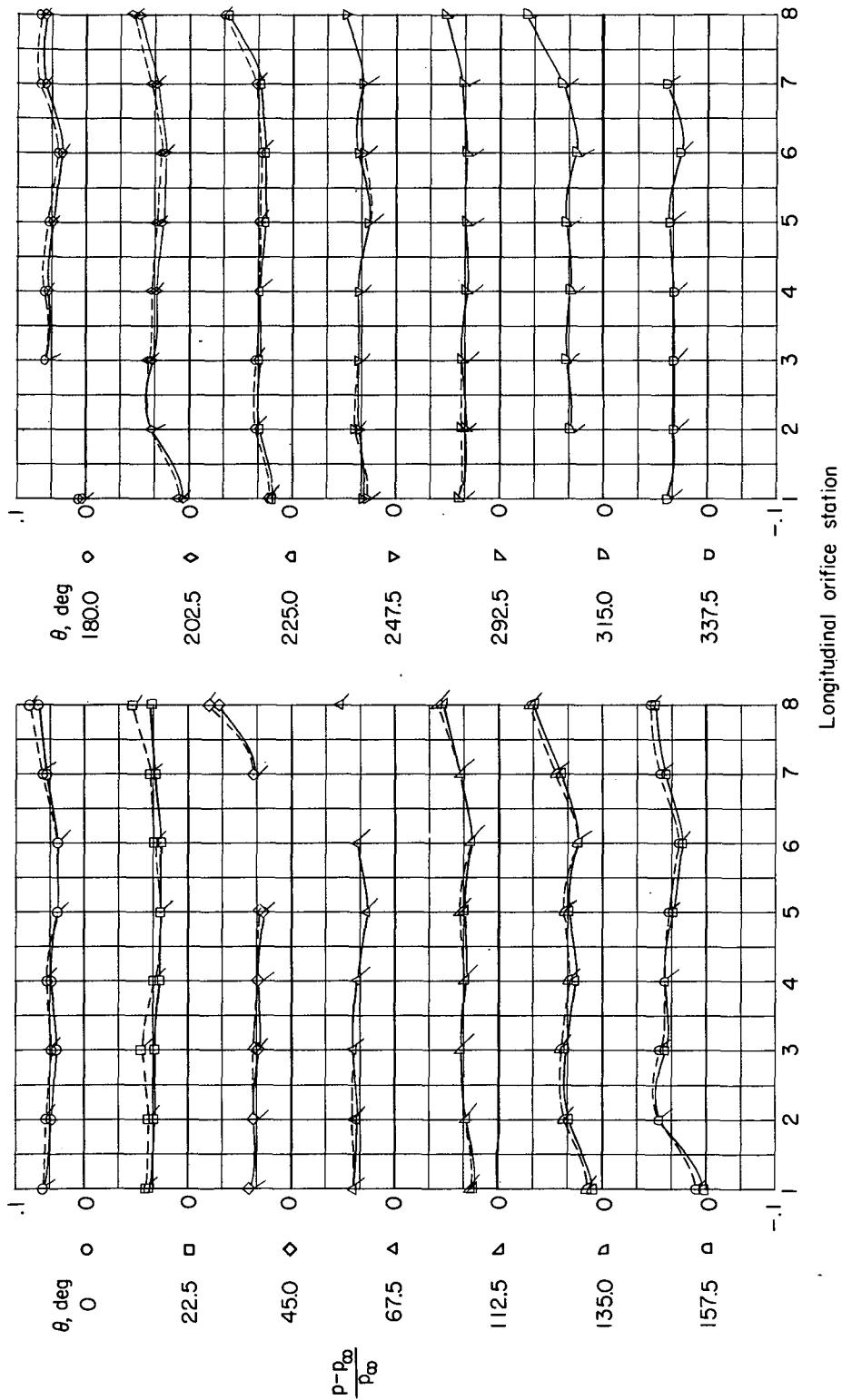
(a) $\alpha = 0^\circ$.

Figure 10.- Variation of static-pressure error coefficient with longitudinal orifice station for $\phi = 90^\circ$, $M = 1.00$, and $w = 0.018 \text{ lb/sec}$. (Flagged symbols indicate exhaust bleed on.)

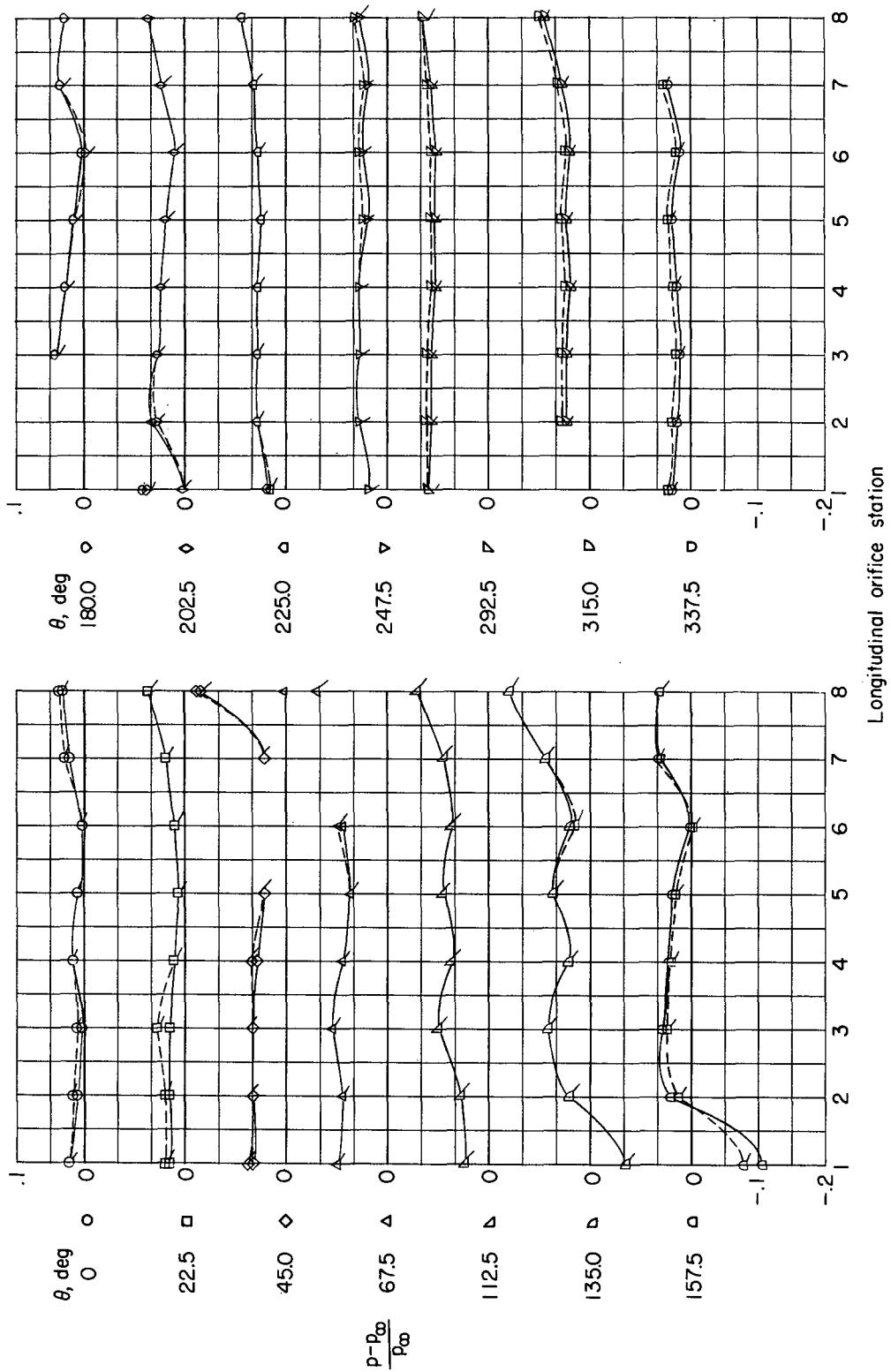
(b) $\alpha = 7.9^\circ$.

Figure 10.- Concluded.